

AN EXAMINATION OF THE PRE-DESIGN PROCESS DOCUMENTATION
AND THE IMPACT ON THE RENOVATIONS
OF
THREE HISTORIC THEATERS

A Thesis

by

LESA ANDREA ROZMAREK

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

August 2008

Major Subject: Architecture

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Approved by:

Chair of Committee,	Robert Warden
Committee Members,	David Woodcock
	Richard Burt
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ABSTRACT

An Examination of the Pre-Design Process Documentation and the Impact on the
Renovations of Three Historic Theaters. (August 2008)

Lesa Andrea Rozmarek, B.S., Lawrence Technological University

Chair of Advisory Committee: Prof. Robert Warden

This thesis examines the pre-design documentation from the renovation of three historic theaters located in Detroit, Michigan. Two theaters hired architectural firms to produce a pre-design document. The third theater utilized a design-build approach to renovation. Interviews were conducted to review the approach and final outcomes.

It became evident through the analysis of the documentation and interviews that it was beneficial in the renovation of a historic theater to have a comprehensive pre-design process that identifies: the nature of the pre-design document, the nature of the client, the nature of the pre-design team, and the scope of work and time available. It also became apparent that the organizational approach that would apply to most any document for a heritage building should follow the *Problem Seeking* format of: Form, Function, Time and Economy. Utilizing this format for a pre-design record should yield a document that is concise, comprehensive and flexible.

DEDICATION

For my Grandmothers,
Ruth Kudich and Violet Rozmarek
Life is about living, listening and laughing.

ACKNOWLEDGEMENTS

This has been a long and tedious process and many people deserve to be recognized for prodding me along in completing this thesis.

My loyal committee, Robert Warden, David Woodcock, Richard Burt, Ph.D. and Dawn Jourdan, Ph.D., your support has never waived and you have never doubted my dedication to completing this degree, for this I can only express my heartfelt appreciation.

Ed Francis, the preservation bug bit me while working in your office. You are truly a first class mentor, architect and friend.

Mike Quinn, you are passionate about architecture, contextual design and teaching. Without people like you, the progression of knowledge would halt and we would never move forward. Thank you for letting me be one of your students.

Kim Johnson, your insight on theater renovation and adaptive reuse are truly inspiring. It is a valuable lesson learned in putting the art form before the patron, for if art can not be made – there can be no patrons. Thank you!

AIA Michigan, thank you for letting me rifle through your C. Howard Crane archives. Hopefully, a copy of this thesis makes it into the archives, too.

Richard Hess, my unofficial Michigan committee member, thank you. The amount of support and guidance you have given me is not quantifiable, and I will never be able to express the amount of gratitude you truly deserve.

NOMENCLATURE

ADA	Americans with Disabilities Act
AIA	American Institute of Architects
AKA	Albert Kahn Associates
DDA	Downtown Development Authority
DSO	Detroit Symphony Orchestra
EIFS	Exterior Insulation and Finish System
HABS	Historic American Buildings Survey
HSR	Historic Structure Report
JPRA	JPRA Architects
K F C	Kessler Francis Cardoza Architects
LHAT	League of Historic American Theaters
MEP	Mechanical Electrical Plumbing
MOT	Michigan Opera Theater
NPS	National Parks Service
PUDI	Preservation Urban Design Incorporated
QE A	Quinn Evans Architects
SOH	Save Orchestra Hall, Inc.

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1. INTRODUCTION AND SIGNIFICANCE

Dotted across America, cities and small towns are home to a historic theater. Theaters ranging in size from large elaborate movie palaces and Broadway stages to simple movie houses and community theater stages are apart of the fabric of their communities and serve as local landmarks. These venues have stood the test of time and have housed many special memories and entertained multiple generations. However, the test of time can also lead to the demise of such a structure. The loss of community heritage due to misunderstanding the complexity behind this building type is the primary reason as to why this study focus' on historic theater renovation.

This thesis analyses the impact of the pre-design process in historic theater renovation. Through careful research and dissemination of the data two main conclusions have been made: (1) the utilization of the pre-design process is beneficial to a historic theater renovation, and (2) to achieve overall project success there should be a high quality pre-design document that is comprehensive, concise, and flexible.

It is a difficult task to measure success in a project, however, in a historic theater renovation, I am defining that overall success of a project can be determined by discussion of a series of topics in which valid arguments for determination of success can be made. Those discussion topics are:

- Validity of the pre-design document through out the renovation project.
- Disposition of the project team, before, during and after the renovation project.

- Level of architectural design achievement and impact on the heritage building.
- Function of the space for Owner use.
- Economics.

This thesis does not go into any great depth of discussion in regards to economics; however, it does closely examine the other four topics.

Historic theaters are extremely complex and unusual spaces to renovate. They require a team of exceedingly skilled architects, consultants and craftspeople dedicated to a highly sensitive renovation. The selection of team members is a crucial point in the planning process.

Restoring any building is an exacting process, but restoring a building of historic or architectural significance required all the art and science at an architect's command. At every step, another man's ideas and another era's ways must govern. There is no room for ego in a good restoration.¹

With the selection of a qualified team, so begins the process of discovery and treatment.

A key component to the success of a renovation project is the selection of the project team. Project team specialists can consist of the following person or persons:

“Architectural Historians, Conservators, Historical Architects, Historical Engineers, Historical Preservationists and Historians.”² Team members should reflect the

“disciplines” a “project requires”.³ Additional team members include: “architects, engineers, contractors, consultants, interior designers, administrators, conservators, curators, and the owner or facility manager.”⁴ In the case of a theater renovation, the list

would also include an acoustician, lighting specialist, theater consultant and many other highly specialized trades that would be tailored to each specific project's needs.

To further understand historic theater renovation, it is necessary to understand the culture of theater renovation. It is important to recognize and accept that theater renovations often are a product of a grass-roots movement.

A large majority of historic theaters have gradually over time fallen into serious disrepair, become abandoned or have been demolished. Causes of the decline of these theaters range from: economic decline of a locality to changes in trends of popular types of entertainment (i.e., vaudeville to projected film). According to a 1971 article in *Architectural Record* magazine, physical causes of disrepair are “termites, weather, vandalism and the ultimate destruction of a wrecking crew...”⁵ For a threatened historic theater to be added to the list of “To be slated for demolition” is usually the wake-up call to the community that ultimately initiates a renovation. This “wake-up call” typically sets forth a grass roots movement by community members or activists to save the theater building. A person or group of persons will band together to form a business or a not-for-profit organization that is dedicated to reopening the theater. This process begins the rebirth of a historic theater.

Another owner type is the private owner or private corporation. Reuse of a space that meets the needs of the program often makes more economic sense than construction of a new space, which may require land acquisition costs and the overall cost of constructing a new building. A for-profit business may also be able to take advantage of tax credits and additional economic incentives that make historic renovation more



Fig. 1. Photographic montage demonstrates the lengthy timelines often associated with historic theater renovations.

attractive. Finally, in the case of many historic theaters, owners recognize the marketing potential of breathing life back into a structure that tugs at the heart-strings of many people, increasing the economic potential of the business.

A trait that is unique to this complex building type is that historic theater renovations often take several years or even decades to complete. They are long term projects. Individuals on the project team will come and go, it is imperative that there is a framework in place that maintains the vision and goals set fourth by the Owner in the beginning. One example of a long term project, that is also a study subject for this thesis, is the Orchestra Hall in Detroit, Michigan (Fig. 1). The master plan for the building was completed in 1979, phase one, which was heavily detailed in the master plan, was completed in 1989, and later phases outlined in the document were completed in 2003 and 2005. The long term vision of the owner has been realized through the framework that was laid out twenty-six years prior.

This study evolved from the desire to gain further understanding about the pre-design process of the renovations of historic theaters, to learn more about one of the most complex building types, and observe what had been done in the past. The product of this data collection resulted in the emergence of the necessity of the pre-design document and observance in the trends that could produce a higher quality pre-design document.

Initially, I thought I would explore the question, “What factors influence design decision relating to historic theaters?” However, through the methodology that was utilized in this study it became evident that there is a need for understanding how to provide a higher quality design document that is comprehensive, concise, and flexible. The question slowly revealed itself as, “What is the impact of the pre-design process in historic theater renovation?”

2. LITERATURE REVIEW

This study at the outset began as a study of a document called the “master plan”. The master plan is one of many different types of documents that may be produced during the pre-design process. Through this initial exploration I have learned that not all renovation projects have a master plan. A theater renovation can be successful without the creation of a so-called master plan document. This conclusion further prompted and redefined the proposed study of exploration of the pre-design process.

Much of the initial reviewed literature discussed the components of a master plan document, the necessity of the pre-design program and questions that are commonly explored during the pre-design process. The hole in the available information resides in the lack of information that specifically relates to examples of the historic theater renovation process. In the literature review process the majority information in regards to the pre-design process is given from a textbook preservation perspective and is not specific to historic theaters. Few examples were reviewed of the final impact that the theater renovation had to the community, lending credibility to the necessity to learn more about this elusive process.

To begin understanding why theaters are renovated, the reviewed literature revealed a great amount of information that explained theater renovation was often used as a catalyst for redevelopment in economically depressed areas of cities. In Susan McCarter’s article, *Historic American Theatres*, she provides many examples of theaters that were intended to be a catalyst for rejuvenation of a neighborhood or downtown area. McCarter discusses the reasons why restoring a historic theater is often a cornerstone of

revitalization. She also explains that the theaters typically have shows or events after five o'clock in the evening, which in turn, keeps people downtown. She also notes that the "restored exteriors make the streets look better and, as a result people feel safer."⁶ Due to this increased sense of security, other businesses and people begin to move back into the downtown area and thus populating the once desolate area.⁷

One example that McCarter uses to describe this concept is Playhouse Square Center in Cleveland, Ohio.⁸ This six-acre area in downtown Cleveland is home to four separate theaters buildings operated by the Playhouse Square Foundation. The spatial needs for the foundation were met by the reuse of The Ohio, the State, the Allen and the Palace theaters. The Ohio, the State and the Palace theaters are listed on the National Register of Historic Places; began rehabilitation work in 1974; fourteen years and \$37.7 million later renovation was completed.⁹ The fourth theater, the Allen, was renovated in 1993, rounding out the last of the four historic theater renovations. An analysis conducted by the Federal Reserve Bank of Cleveland in 1989, showed that the renovation of the theaters increased rents in the surrounding areas, the theaters infuse "\$15 million annually into the local economy" and had "...triggered the first major building in downtown Cleveland since the 1920's: the \$40 million Renaissance Office Building and a \$28 million luxury hotel...."¹⁰ The renovation of the four theaters became a mechanism to attract patrons to the downtown area; thus creating a synergy to the surrounding areas sparking the redevelopment of downtown Cleveland.

This example relates to this study because there are multiple historic theaters in the same city feeding off of each other thus creating a synergy of rejuvenation. Detroit

began experiencing a decline in population and metropolitan activity in the 1940s. At the point in time when the case study buildings in this thesis were showing signs of a possible rebirth, the city had hit rock bottom in social activity and urban identity. A slow but gradual rejuvenation is currently happening within the city. Is there a link to the renovation of these theaters to the rebirth of Detroit? That perhaps is another study. Is there a relationship between the sequences of the renovation of the theaters that the architects took into account prior to renovating another theater? These questions provide a basis for comparison in the case study theaters in this thesis.

The next step in learning the impact that a historic theater renovation can have on a local economy, is further understanding the necessity of stepping back and fully reviewing the viability of the structure.

As discussed in section one, Introduction and Significance, a historic theater is a building that has many intricate parts. A single architect cannot be a master of every aspect that requires attention when renovating a theater. An architect is more accurately judged on their ability to assemble a qualified team of consultants of whom their specialties coincide with the specific needs of a particular building and their ability to conduct and direct the team in a cohesive manner. Consultants that may be used in a historic theater renovation may include, but is not limited to: structural engineers, mechanical engineers, electrical engineers, theater consultants, acousticians, and paint analysis consultants. The architect can then work on architectural issues while managing the team.¹¹

Prior to picking out paint samples and making drapery selections, the Owner/Client should take a look at the reality of this project to determine the feasibility of renovation. An architect should also be aware of the risks and different factors that provide for a feasible project. LHAT recommends going through a checklist of the following questions to answer and evaluate whether or not the project is worth pursuing.¹²

- “[I]s the theatre worth saving?”
- “Can it be restored and how much will it cost?”
- “How does the community feel about the theatre?”
- “Is there an audience in the town to support not only the restoration effort, but its operation after completion – and for what kind of entertainment product?”
- “Can the theatre be exploited as a model restoration project in the community?”
- “Are there local art groups, desperate for a performance space, who could utilize the theater were it to be modernized technically, and will they lend their support and that of their boards, etc.?”

However, this list is a starting point; it is meant to serve as a preliminary source of initial questions that aid in determining the feasibility of theater restoration which may be apart of the pre-design process of a historic theater.

Because the initial study was rooted in learning more about the master planning process and through the aid of the literature reviewing process, I made the determination of questioning the entire pre-design process. I needed to learn more about the pre-design process from a historic preservation context, specifically targeting any information

available on historic theaters. By definition, a master plan is a combination of a historic structures report¹³, comprehensive conditions analysis¹⁴, client visionary report and development plan^{15 16}. These are only a handful of the different types of formal documents that can be produced during the pre-design process. Questions that can be drawn from the preliminary study of master planning are:

- How is it determined which approach is appropriate for a particular theater?
- What is the process for determining the conclusions of said report or approach?

Although there has been work published on the topic of the pre-design process both relating to new construction and historic preservation based practices, published work documenting the pre-design process in a real-life application of a renovation of a historic theater is virtually non-existent. The work that is available is written in a tone that makes broad generalities that are related to the pre-design process, but are not put into the specific context of historic theater renovation.

The Project Phases

Since the primary focus of the study is the pre-design process, specifically related to historic preservation or renovation projects, I feel it is important to provide the context in which the pre-design process falls within the scope of the entire project. The basis for identifying the project phases comes from Swanke Hayden Connell Architects, authors of Historic Preservation Project Planning and Estimating. Although, this book is written from one firm's point-of-view, it is a comprehensive text that relates the information solely to historic preservation (preservation, rehabilitation, restoration and

reconstruction¹⁷⁾ projects. Their definitions and principles are also consistent with past experiences that I have had in the architectural professional environment.

Swanke Hayden Connell Architects have divided the actions, architectural work and services into five phases; Phase 1: Investigation & Documentation, Phase 2: Planning & Predesign, Phase 3: Design, Phase 4: Bidding & Negotiation, and Phase 5: Construction.

Phase 1: Investigation and Documentation, is the portion of a project that documents the past of a structure against its current conditions. It is an exploratory process of gathering historical information or historical research, this information may include, prior building uses, investigation of maintenance records, researching prominent historical figures that may have visited or owned the building and identifying unique architectural characteristics. Historical research of a structure would also include gathering “anecdotal information” explaining the structure’s story, available existing architectural information, such as drawings, photographs and maintenance records. Technical data on the buildings current composition is also gathered to assist in the story of the structure.¹⁸ Information gathered from this research will serve as a basis for understanding how a structure may have been constructed.¹⁹ Historical drawings cannot be deemed reliable due to the fact that quite often changes are made during construction that are not recorded and most buildings are changed during use.²⁰ However, historical drawings will aid in identifying areas additions or alterations to the structure over time.²¹

A number of many different deliverables can come from this work. One deliverable that a qualified architect can produce for the appropriate building is Tax

Credit Certification. In projects where the owner or developer wants to utilize State or Federal Tax Credits there is a process that must be followed to identify the building as being qualified to receive tax credits. There are three parts to the tax credit certification process: Part One, is the determination for eligibility; Part Two, identifies the defining historic characteristics that shall and should be preserved along with the treatment for those work items; Part Three, documents the preservation work to certify that the project was done correctly and within the guidelines dictated in Part Two. This documentation process can be quite extensive and became a valuable source of information when researching the history of the theaters studied in this thesis. Other deliverables the Architect would produce from this phase may come in the form of one of the following, an “Existing Conditions Survey,” or a more intensive document called a “Historic Structures Report.”²²

The Existing Conditions Survey, takes a technical look at the building in its current state to assess the “composition, configurations, and as-built conditions.”²³ The survey usually begins with a review of historical construction drawings to gather information of the building assemblies that should be verified during a site visit.²⁴ This review will give the architectural team an understanding of some of the conditions they may run across during the “visual field inspection”²⁵ of the structure. During the “visual field inspection” additional assessment in the form of “material testing” is typically preformed where needed.²⁶ This is a rigorous approach to assess the structural composition through field and laboratory testing.²⁷ Investigations during the Existing Conditions Survey may be “invasive, or destructive” or non-invasive.²⁸ A thorough

examination of the structure is necessary to accurately predict what conditions exist and will have an impact on scope of work or construction practices.²⁹ Knowledge of the overall composition and condition of a structure prior to design and construction can “prevent unplanned expense for correcting unforeseen conditions once construction is in progress.”³⁰ An Existing Conditions Survey should yield: “... a record of the building condition at a point in time; document the overall configuration of the building; document the configuration of architectural assemblies and buildings; and identify all damage and deterioration.”³¹

The Historic Structure Report (HSR) is a holistic document that incorporates Historic Research with the Existing Conditions Survey. This document “provides guidance for the preservation of historically significant components and features that may be affected by future development of the building.”³² The National Park Service (NPS) issued Preservation Brief 43, *The Preparation and Use of Historic Structure Reports*, which provides a more rigorous explanation of the composition of a Historic Structure Report. According to the NPS, the typical type of building that has a historic structure report commissioned for it is a building that serves a public use. Specific building types listed are, “state capitols, city halls, courthouses, libraries, hotels, theaters, churches, and house museums.”³³ That it is not unheard of, but rarely are HSR’s requested for private residences.³⁴ Preservation Brief 43 does not give a reason for this phenomenon. However, speculation of the high degree of rigor involved and therefore the cost is a probable reason of why a typical home owner would not commission a HSR.

The production of a HSR document requires the assembling of a multi-disciplined team. In Preservation Brief 43, to demonstrate the degree of complexity and expertise in assembling a qualified team to analyze a building the author states that a singular team may include all of the following experts: “historians, architectural historians, archeologists, architects, structural engineers, mechanical engineers, electrical engineers, landscape architects, conservators, curators, materials scientists, building code consultants, photographers, and other specialists.”³⁵ The experts each analyze the structure or property in respect to their own field. The recommendations are then holistically analyzed and a “scope of recommended work” is determined and included in the final report. The production of this highly detailed report is only one example of a tool that may be incorporated into the pre-design process.

Phase II: Planning and Pre-design – According to Swanke Hayden Connell Architects, in the planning and pre-design phase architectural and engineering, in conjunction with the Owner and/or users of the building, strategize the programming requirements. Architectural programming takes into account the “proposed use, code requirements, agency review and approval requirements, the necessary rehabilitation and restoration of existing finishes and components, and any other necessary improvements.”³⁶ The procedure of engineering programming explores the “infrastructure” of a building as relating to, “structural, mechanical, electrical, plumbing, fire protection, telephone, and data systems.”³⁷ The product of effective programming should yield a “scope of work” to be completed and an estimated budget for “both construction and building operation.”³⁸

It is at this point where we depart from the topic of study in this thesis. The explanations given for these phases will be kept very brief as this information is rarely discussed in the case studies.

Phase III: Design – Within the design process there are actually three different phases. Schematic design, design development and construction document preparation.³⁹ Schematic design is briefly explained as the stage in the design process where pre-design recommendations are applied to the project in a conceptual manner. Design development is the next step in taking the project to a more real and buildable level, where products and types of finishes have been agreed upon which then launches you into construction documents. Construction documents are the drawing from which the contractor bids and builds the project.⁴⁰

Phase IV: Bidding and Negotiation – During this phase either a contractor is selected through a traditional bidding and qualifying process or the previously selected contractor (many projects have a contractor on board from conception of a project and are simultaneously hired with the architect by the owner) provides cost estimate materials.⁴¹ A contract is usually agreed upon at this time by a newly hired contractor and a schedule for construction is set.

Phase V: Construction – The construction process involves the architect reviewing submittals from provided by the contractor, attending the job site for meetings with the contractor, inspection of work performed and closing out of the project.⁴² This was the phase in which Albert Kahn Associates (AKA) began work on the Detroit Opera House. Due to the long succession of architects and theater promoters, AKA was hired

at a point where the theater was officially under construction. A large part of their work thus became rapid problem solving and in close cooperation with the contractor.⁴³

In this study it is important to understand the accepted architectural process because, as discussed above, the Detroit Opera House was a design-build project, and was renovated under completely different circumstances than the Fox Theater or Orchestra Hall. This discussion continues in the section six: Discussion Content and Document Review.

3. METHODOLOGY

This study is a qualitative study to gain further insight and understanding of the pre-design phase in preservation of historic theater buildings from both the literature and real-life practice.

Position of Inquiry

The researcher presents this study from the position of a constructivist. To be a constructivist, one believes that “[k]nowledge is: constructed from interaction and is embodied in those competent to interpret the substance of the construction.”⁴⁴ A constructivist believes that knowledge is a by-product of a capable thinker who observes and interprets observations. The recorded interpretation becomes what we know as knowledge. A constructivist believes that knowledge, as we know it, can change at any given time based upon the person deducing the observations.

Constructivists also engage themselves in interaction with study participants.⁴⁵ To participate in research as a constructivist, the understanding of the view of knowledge is that the process is “dynamic” and employs that multiple participants or a “community” pool of information to achieve knowledge.⁴⁶

To disseminate the information in this study and to convert it into knowledge it must be presented from the constructivist’s point-of-view. This is a study from a large “community” of information and the knowledge is created when someone acts as an interpreter and gives the information meaning. That is how this thesis is presented.

Means of Inquiry

The initial motivation for this study began from the desire to learn more about the pre-design process in a historic preservation project. Since it is not possible to develop precise hypotheses for this kind of broad inquiry, the researcher was advised to seek guidance in conducting a study of this nature from a brief study of Grounded Theory methodology.

According to Paul D. Leedy and Jeanne Ellis Ormrod, “grounded theory approach is to begin with the data and use them to develop a theory.”⁴⁷ The development of grounded theory emerged from the field of sociology and has been used to analyze “people’s actions and interactions”.⁴⁸ Being that a core component of this study is an interviewing process, that is the main source of raw information, it becomes evident that the most effective manner in dissecting information gathered is to employ a grounded theory study.

The grounded theory portion of this study in combination with a historical account or case study of persons and places discussed in this topic the overall methodology of dissection is a hybrid; quasi-grounded theory study. This analysis and utilization of both case study analysis and quasi-grounded theory will provide strength to the qualitative study.⁴⁹

Study Organization

This study is divided into three parts.

The first part is the literature review which discusses the motivation behind the study, as well as the incentives and concerns behind a theater renovation. This section

also provides an initial discussion of formal pre-design documents. The conclusion of this section is a review of the entire formal process of building design and construction. This section is meant to provide perspective as to where in the process pre-design falls and an understanding where the Detroit Opera House was in the construction process when Albert Kahn Associates entered that project.

Part two of this study, is a case study analysis of three separate theaters located in Detroit, Michigan (Fig. 2) , that were all originally designed by architect C. Howard Crane, that have under gone renovations lead by three separate architects. This section is labeled the Historical Review. It discusses:

- a brief history of who C. Howard Crane was and,
- a review of the history of the
 - Detroit Opera House
 - The Fox Theater
 - Orchestra Hall.

Part three of this study is the grounded theory study. This section reviews the procedures used by architects that have acted as the historic preservation architect on each of the theaters discussed. Information presented in this section includes a brief history of the architect interviewed and a record of the interview proper. It is concluded by an analysis and the development of conclusions. The final section of part three speculates on the direction of future research.

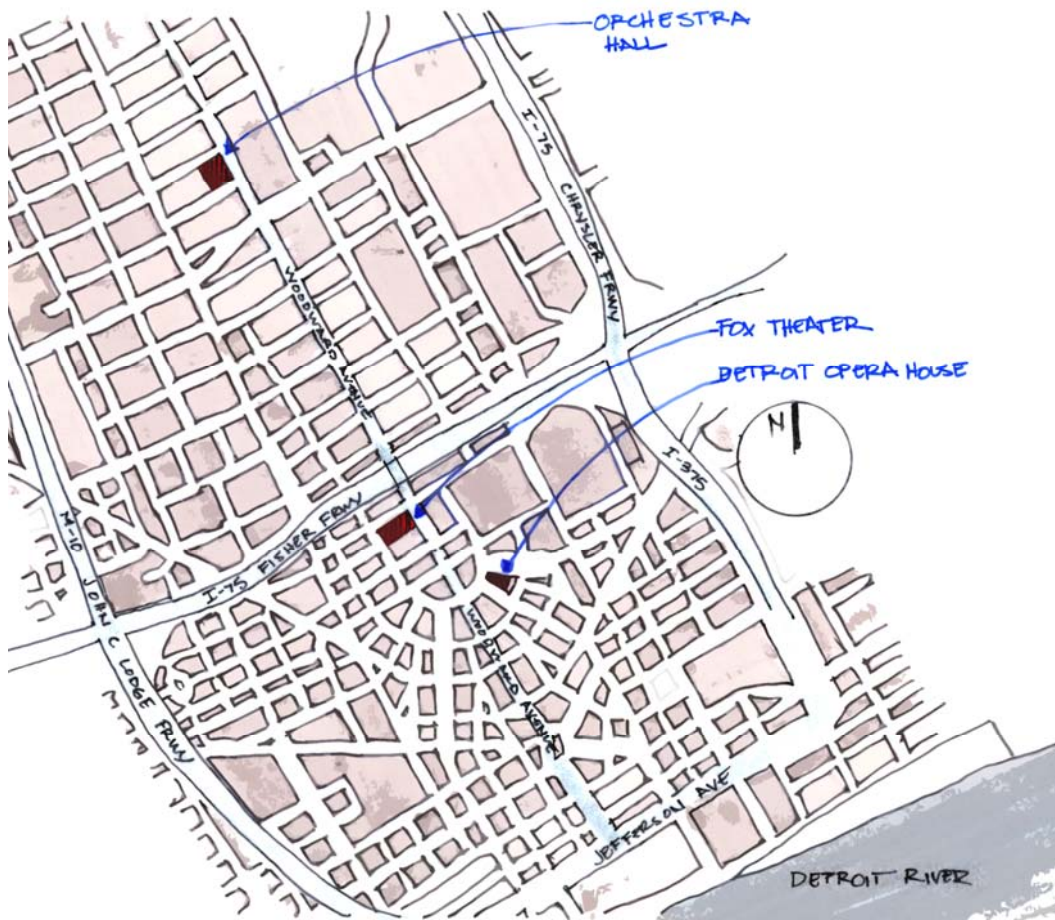


Fig. 2. Location of case study theaters in the City of Detroit.

Criterion for Sample Theaters

Through out this document the definition of what defines a building as being historic is provided by the National Parks Service (NPS). According to a National Register Bulletin, entitled, “Guidelines for Evaluating and Nominating Properties that Have Achieved Significance Within the Past Fifty Years,” a structure or property should have reached the age of 50 years prior to being considered for historic designation. The 50 year rule may be waived should the item under consideration be “of “exceptional

importance,” or if they are integral parts of districts that are eligible for listing on the National Register.”⁵⁰ This allows for buildings or sites to be considered for historic designation and protection that exemplifies a trend or outstanding piece of architecture. In addition to the NPS definition of a historic building, the League of Historic American Theaters (LHAT) has defined that in conjunction with the NPS definition of “historic,” the final characteristic that a historic theater must have is that it must be able to be used as a “performing arts facility”.⁵¹ All of the theaters studied in this thesis are all over the age of 50 years and have attained recognition by being listed on a historic register and/or having received an architectural award.

In order to maintain a consistency for this study, the following prescribed criteria for the sample theaters will be used in each of the case studies.

Sample theaters are theaters originally designed by C. Howard Crane. Crane designed the majority of the theaters in Detroit during the first half of the twentieth century. Sample theaters must currently have over 1,000 seats; currently be used as live performance venues; and have renovations led by different architects or architectural firms.

The controlled item in this study is the original architect; C. Howard Crane, he initially designed all sample theaters. Examining the differences in processes in the pre-design phase that each renovation architect took to maintain the design intent of the original C. Howard Crane theater. Being a qualitative study, this consistent element is one of the factors that create validity in this study.

Below are the sample theaters and their qualifications as to full filling the criterion (Table 1).

Table 1. Theaters and their descriptions.

<i>Theater</i>	<i>Year Constructed</i>	<i>Current Number of Seats</i>	<i>Restoration Architect</i>	<i>Year Renovation Completed</i>
Detroit Opera House	1922	2700	Albert Kahn Associates	1996
Fox Theater	1926	4500	William Kessler and Associates	1989
Orchestra Hall	1919	2014	Preservation Urban Design Incorporated with Quinn Evans Architects (1989)	1989, 2003, 2005

The advantages of formulating this study in this manner are:

- It will expose the differences in processes among the restoration architects more readily than a study that involved various original architects.
- It will provide a localized view of theater renovation in Detroit.
- It will reveal the components of the pre-design process in preservation of historic theaters designed by C. Howard Crane.

The disadvantages of this type of study are:

- It focuses on Detroit and C. Howard Crane theaters. The information obtained may not be deemed reliable when applied to any other type of theater.
- The information may not be applicable to smaller, more intimate theaters.

Affiliation with Study Participants

To preserve the integrity of this study it must be declared that many of the study participants were known to the researcher prior to the initialization of the study. Efforts have been made through third party proof reading and peer review to avoid bias and undertake an objective study.

There are no prior affiliations between the researcher and architect, C. Howard Crane, or the Detroit Opera House. Minor association with Albert Kahn Associates (AKA) includes the researcher submitting her resume for possible employment to AKA in the summer of 2006.

The researcher worked for Kessler | Francis | Cardoza Architects (K|F|C) (formerly known as, William Kessler and Associates) from December 2002 – March 2004. The architect interviewed, Edward Francis, is a mentor of the researcher and close friend. The researcher has also visited and enjoyed the Fox Theater in a non-professional capacity.

The researcher is currently employed by Quinn Evans | Architects (QE|A) (August 2006 - present). Her position with the firm is a Technical Intern II or Architect II. Her supervisor, Elisabeth Knibbe, performed the historical research for the Fox Theater project. Ms. Knibbe was not interviewed for this study; however, she was consulted in providing direction for researching information for the historical review of the Fox Theater. QE|A was the architectural firm that was chosen as the restoration architects for Orchestra Hall – one the focus theaters of this study.

As with most professions in a localized area, it is difficult to find specialized study participants that are completely unknown to a researcher in a highly specialized field. This declaration of affiliation to the study participants is meant to state that, yes, the researcher knows who her participants are and they know who she is, but efforts have been made to eliminate partiality in order to preserve the integrity of this research document.

4. HISTORY

C. Howard Crane

As Architect for over two hundred and fifty theaters, Charles Howard Crane (C. Howard Crane), was one of America's most prolific theater architects in the twentieth century. C. Howard Crane was born August 13, 1885 in Hartford, Connecticut. He finished high school in Hartford and began his apprenticeship at the firm of Bagley and Goodrich, also in Hartford. Upon completion of his apprenticeship, he then spent one year working for William H. Caldwell, Architect, located in New Britain, Connecticut.⁵²

As many architects did in the first half of the twentieth century, he headed to Detroit, Michigan. Detroit being one of the major metropolitan cities of the United States, it has attracted many young architects (such as, Albert Kahn, Minoru Yamaski, William Kessler, Eiel Saarinen, Aiel Saarinen, George D. Mason, and others) to begin or to blossom their careers in the Motor City. Crane then spent "a few months" working for Albert Kahn "during a rush period." He then moved onto the firm of Field Hinchman and Grylles (it is believed that he meant Grylls, later known as Smith Hinchman and Grylls). There he became the "Head Draughtsman" and after three years moved on to the office of Adolf Mueller, where he again functioned as, "Head Draughtsman and office manager."⁵³

In 1908, C. Howard Crane and fellow architect, John Watt, opened their own office known as Watt and Crane. The following year, C. Howard Crane separated from the partnership and opened his own firm. The main office for C. Howard Crane was

located in Detroit, but he also opened satellite offices in New York and Chicago. Crane remained in Detroit until the early nineteen thirties, following the on set of the Great Depression. His office in Detroit was left in the hands of Elmer George Kiehler and Dixon B. Kellogg, which then became known as C. Howard Crane and Associates (also has been noted as, Crane, Kiehler & Kellogg).^{54 55}

In 1934, Crane left the United States for Europe, where work was bountiful. He spent a year working in Milan and then lived out the remainder of his life in England, where he set up an office directly across the street from Buckingham Palace. Among the over two hundred and fifty theaters that he designed in the United States, additional achievements that he is known for are the design and construction of the Earl's Court Exhibition Building in London, over 300 industrial plants, offices and buildings in and around England; he was recognized as a major participant in the reconstruction of London and England after World War II. He came to be known as a "leading authority on the reconstruction of bombed areas..."⁵⁶

Relocating to another continent did not suppress C. Howard Crane's affection and interest in his adopted hometown of Detroit. Once abroad, he became a prolific writer, communicating his accomplishments and travels back to the AIA Detroit office, notifying AIA Detroit when he would be in town, so that the chapter could arrange lectures featuring C. Howard Crane as the keynote speaker.⁵⁷



Fig. 3. Location of Orchestra Hall.

C. Howard Crane passed away on August 14, 1952, in London, England, one day after his sixty-seventh birthday. His legacy firm is no longer in existence in Detroit. However, his true legacy lives on in the abundance of structures that he constructed around Europe and here in the United States.

Orchestra Hall

Constructed and completed in 1919, also, the first of the three theaters to be constructed, Orchestra Hall is often referred to as C. Howard Crane's "earliest



Fig. 4. Front elevation of Orchestra Hall, Detroit, Michigan. April 2008.

triumph”.⁵⁸ The theater is located at the corner of Woodward Avenue and Parsons Street in an area of Detroit that is currently known as the “University District” (Fig. 3).

The design of the building can be classified as “Italian Renaissance”, however, it is an eclectic mix of many classical orders, dominated by Italian renaissance.⁵⁹ The exterior three story composition on the Woodward Avenue façade, which is the main façade for the structure, is a classically composed limestone and light yellow brick clad front elevation (Fig.4). Street level is composed five entry doors into the theater space, flanked by two sets of storefronts on each side of the quintet of entry doors. The exterior cladding at the first floor is predominately ashlar faced limestone block. Separating the

first floor from the second floor is a wide belt course that features a simple medallion indicating each bay of the structure; this “provides a base for the upper architectural treatment.”⁶⁰ The second and third stories feature a limestone pavilion that occupies the five center bays. The five bays “are articulated by a row of colossal, flat, un-fluted pilasters of the Renaissance Composite order.”⁶¹ Each vertical column of windows is accented at mid-window and at the top by a garlanded relief panel. Topping off the pavilion is an entablature with a wide frieze accented by dentiled cornice and wreath relief at each pilaster.⁶² Flanking the pavilion at each side is single window at the second floor level. The building is capped off by a highly decorative frieze featuring finely detailed swag carvings and a geometrically patterned relief band. In the center of the façade is a large oval cartouche. Unless otherwise indicated the field cladding for this façade is light yellow brick.

The auditorium consumes the majority of the floor plate of the structure.

...[it] is almost rectangular in plan, its basic shape being modified by side walls that curve inward somewhat to join the proscenium wall.⁶³

Originally, the interior was elegantly decorated “in ivory, with delicate tracings of gold and silver and occasional touches of blue-gray.”⁶⁴

Orchestra Hall was constructed by the Detroit Symphony Orchestra (DSO), to function as their home. Formed in 1872, the DSO performed in the original Detroit Opera House (not the same Detroit Opera House as studied in this thesis), the space was too large, provided inadequate rehearsal space and underperformed for the group in so many ways. After a succession of temporary conductors, one guest conductor, Ossip Gabrilowitsch, impressed the audience so much that the organization sought out to make

Gabrilowitsch their permanent conductor. Gabrilowitsch agreed to be their permanent conductor on one condition that they construct a suitable venue for the DSO to perform in.⁶⁵ Four months and twenty-three days later, the building celebrated opening night.⁶⁶

On January 29, 1939, the DSO announced that Orchestra Hall would be abandoned due to the high yearly cost of operation averaging around \$32,000 in addition to the "...responsibility for numerous repairs and improvements which were" at that time required. The DSO then moved to the Detroit Masonic Temple Auditorium where the cost to perform there was \$19,000 per a year in rent. The last concert performed by the DSO at Orchestra Hall was March 18, 1939.⁶⁷

From there the building had a long succession of building owners and occupants. Following the abandonment by the DSO the City of Detroit seized the property for "non-payment of taxes."⁶⁸ On Christmas Eve of 1941, Orchestra Hall came back to life now to be known as the Paradise Theater.⁶⁹ New Owners, Ben and Lou Cohen, transformed the once place of classical repertoire into a contemporary performance venue. Big band and jazz greats such as Duke Ellington, Louis Armstrong, Ella Fitzgerald, Billie Holiday, Lena Horne, Cab Calloway and Pearl Bailey.^{70 71} Being that, Orchestra Hall had been "designed with motion picture projection and complete stage facilities", the theater at this point would also be utilized as a movie theater.⁷² The Paradise Theater closed in 1951, bringing to an end consecutive use of Orchestra Hall as a live performance venue.

After the closing of the Paradise Theater, the building was acquired by the Church of Our Prayer. During the occupation of the church, Mercury Records made a

deal with the DSO (in 1951) for a series of long-playing recordings.⁷³ Revered for its renowned acoustics, the DSO returned to Orchestra Hall due to the fact that the acoustics in the Masonic Temple and Detroit's Music Hall were less than suitable for recording.⁷⁴ The "last recording [at Orchestra Hall] was made in 1956."⁷⁵ The DSO recorded under contract between the period of 1951 to 1956, when the church then abandoned the building, "but the recordings had continued until falling plaster made continued use of the building too hazardous."⁷⁶ It is important to note that in there has been contradictory findings indicating that the last recording may have taking place in 1959. I have chosen to use the Historic American Buildings Survey (HABS) documentation as the source of information for the Mercury recordings.

A company called the Nederlander Theater Corporation purchased the building in 1963.⁷⁷ The new owners set forth with the hopes of restoring the theater back to its original grandeur. Awarded "a Federal redevelopment loan of \$350,000 in 1964," the Nederlander Theater Corporation began restoration, however, abandoned the project and Orchestra Hall all together soon there after.⁷⁸

Again ownerless, Orchestra Hall was purchased by Gino's Restaurant Corporation in 1970, with the idea to demolish it and to build a new restaurant in Detroit.⁷⁹ Soon after purchasing the structure they began demolition.⁸⁰ A community activist group formed, called Save Orchestra Hall (SOH) and set out to halt the demolition and raise the necessary funds to purchase the building from Gino's. Gino's immediately halted the demolition to let the group raise the funds. SOH purchased Orchestra Hall from Gino's in either late 1970 or early 1971. The exact date is unclear.

Now SOH was the owner of Orchestra Hall, they were successful in placing the structure listed on the National Register of Historic Places in 1971. The organization continued to raise funds for the restoration of the building, with the intent of bringing the DSO back to its home. Over the course of the last 36 years the structure has endured three significant eras of restoration. The first, which this study focuses on, in particular being solely the restoration of the theater building proper (in 1989), is the period of 1971 to 1989. The second era the addition of the Max M. Fisher Music Center that lasted from 1996 to 2003. The third and latest phase, completed in 2005, was the addition of a new Detroit School for the Arts.⁸¹

In a 1982, the HABS report on Orchestra Hall, noted in 1973, an assessment by architecture firm, Smith, Hinchman and Grylls Associates, Inc., summarized that while almost all of the entrances had been “totally destroyed,” the masonry remained intact and in fairly good condition, exhibiting mostly deteriorated mortar joints.⁸² Between 1973 and 1982, the HABS report goes onto describe additional work performed being that the roof was replaced due to “[w]ater leaks from burst tanks and rain conductors.”⁸³ That damage from this included, “warped floors, streak[ed] wall, and damage[d] large areas of paint and decorative plaster.”⁸⁴ The list of other damage to the structure from the report is as follows:

Many decorative elements had been removed from the building, and a minor fire had destroyed a small area of seating. Most equipment and fixtures had been vandalized and were both inoperable and unrepairable. The stage works were almost completely missing, deteriorated, or antiquated and no longer functional. Toilet rooms were in serious disrepair. Both plumbing and electrical installations required complete overhauling or replacement.

Additionally, a Michigan Land Use Institute article states that the “roof was collapsing, the walls had gaping holes, crumbled concrete and stone [laid] everywhere.”⁸⁵ Work to correct these conditions was performed prior to the 1982 HABS report.

During the era of the restoration of the theater proper, the Detroit News reported in 1988 that \$3 million that had been raised for the restoration since the reported demolition of the building, covering work performed from 1973 to 1988. In a different article the Detroit News stated that for the 1989 renovation part of the scope of work would include, an “increase [in] the number of restrooms, [expansion of] the backstage area, and increase the number of mezzanine boxes from... 12 to the original 26.”⁸⁶ It was estimated in the previously mentioned 1989 Detroit News article that it was estimated to cost \$7.5 million for the 1989 theater renovation work.

Following the restoration of the theater in 1989, the DSO moved back into its original home.⁸⁷ The DSO has continued to perform in its original performance house since its homecoming. Expansion has continued with the completion of the Max M. Fisher Music Center in 2003 and in 2005/2006 the additional expansion with the Detroit School for the Arts. These latter phases have added, roughly, an additional 420,000 square feet to the original building.

Detroit Opera House

The Detroit Opera House was constructed in 1922 in an area of Detroit known as Grand Circus Park or the Necklace District (Fig. 5). Located on the corners of Broadway and Madison just off of Grand Circus Park proper, the Detroit Opera House



Fig. 5. Location of the Detroit Opera House.

was originally named the Capitol Theater. The theater was “originally the flagship [theater] of the midwestern chain of Kinskey theaters.”⁸⁸

When the theater opened it boasted that it was the fifth largest movie theater in the World.⁸⁹ The exterior is styled in Italian Renaissance design. The front façade (Fig. 6) is broken into three vertical masses with three horizontal bands. The two end masses are connected with a less dominant center mass that is slightly set back from the



Fig. 6. Broadway Street elevation of the Detroit Opera House, Detroit, Michigan. April 2008.

end massings surface. The ground level features grand scale storefront window systems with the theater entrance being at the far right massing storefront. Originally a massive marquee greeted patrons to the theater. A simple belt coursing separates the storefront systems from the dominating pavilion above. The impressive pavilion with its fluted columns and Corinthian capitals rise three stories higher above the massive storefront system at street level totaling at this point five stories high. At the top the columns rest an ornate frieze with intricate garland carving and dentil moldings. At its top floor above the monumental frieze are windows that follow the lines of the column treatment that are utilitarian in design. The building is capped off by a belt course that is more ornate than

the lower belt course beneath the pavilion level. This upper belt course features deeply offset corbelling of the terra cotta façade, fanciful detailing at the top of the parapet and is capped off with a medallion-esque cartouche at the center of each end mass. Overall this façade is a restrained exercise in terra cotta cladding.

The Italian Renaissance styling of the exterior bled through to the interior of the theater space. The Detroit Opera House organization gives the original description as the following:

...[L]avish crystal chandeliers, frescoes, brass fixtures, marble stairways and drinking fountains. Rich rose-red Italian damask was used for the main-stage curtain and draperies throughout the house.⁹⁰

The organization of the space is such and at first you enter a smaller lobby that “opens into a three-story grand foyer,” this space wrapped about the rear of the auditorium.⁹¹

The lobby features a mezzanine bridge with a ceiling above it that reeks of elegance and sophistication. Imbedded in the ceiling are “illuminated glass-paneled octagons...” The illuminated octagons then follow through to the interior of the auditorium space at “the underside of the balcony and ...in the cove-lighted octagons curving above the proscenium.”⁹² The inclusive design of this theater is evident from the restraint shown on the exterior, carried through from the lobby into the auditorium. The stylistic approach is very restrained, simple, elegant Italian Renaissance design.

From the beginning this theater was designed to show films. On January 12, 1922, the Capitol Theater officially opened to a showing of the film “The Lotus Eater.”⁹³ The theater changed names in 1929 when a company called Paramount-Publix purchased

it and renamed it the Paramount Theater. The genre changed emphasize vaudeville and live performers.⁹⁴ With the on-set of the Great Depression, the theater closed for a brief period from 1932 to 1934. Led by new management, United Detroit Theaters, it was reborn as the Broadway-Capitol Theater.⁹⁵ During the first couple of decades of the theater's existence it has seen such performers as: Will Rogers, Louis Armstrong, Guy Lombardo and his Orchestra and Duke Ellington.⁹⁶

The theater changed hands many times over the 1940s and 1950s. In the 1960s, the theater was once again being operated by United Detroit Theaters at this time they also renamed the theater, the Grand Circus Theater.⁹⁷ During this decade a small renovation project (estimated at \$100,000) supposedly changed the façade and reduced the seating within the auditorium.⁹⁸ A historical photograph from this time period shows that the marquee has been extremely enlarged to the point that it consumes almost the entire lower portion of the far right massing. The theater showed second-run films until 1978, when it closed again. In 1981, it reopened and switched to a live performance venue for rock concerts. The theater had a fire 1985, which once again forced it to close.

Looking for a permanent home in 1989, the Michigan Opera Theater (MOT), purchased the derelict building along with the nearby, Madison Theater for an estimated \$3.5 million.^{99 100 101} The Detroit Opera House project is unique in the study being that it has a long succession of architects and designers prior to Albert Kahn Associates being brought on board to complete the project. In the midst of the renovation, theater consultant, Kimberly Johnson was hired by Michigan Opera Theater to act as Managing Director of the Detroit Opera House. She previously worked with Dr. David DiChiera,

President of MOT, he sought out her knowledge and expertise and brought her on to the project team. Upon her arrival to the project, a design-build theater consultant, was already at work on the Detroit Opera House. Subsequently, they were let go from the project and a Canadian architectural team was brought onboard. That team of professionals did not meet the needs of MOT and was replaced by Metro Detroit firm. That firm's primary architectural focus was and is still not historic preservation or adaptive reuse, therefore, it was a struggle for them to understand the needs of MOT. That firm completed the design work and was then removed from the project. At this point, it was 1995 and the re-opening of the theater was scheduled for April of 1996. MOT reached out to architect, Beth Yorke, at Albert Kahn Associates. Yorke had previously worked with Johnson at Music Hall (a historic theater in Detroit). Yorke then managed the remainder of the construction and the Detroit Opera House opened as scheduled.¹⁰²

AKA estimated that the cost for renovation to be \$24 million. This cost also included expansion of the stage house.¹⁰³ The Detroit News reported in April of 1995, that even though there was "a gaping hole" where the backstage was yet to be constructed, and that the plaster castings for the ornamentation on the walls were yet to cast, the ribbon-cutting ceremony would still be taking place on April 20, 1996.¹⁰⁴ The Michigan Opera Theater has occupied the former Capitol Theater since 1996 and continues to grow in the now named Detroit Opera House.

The Detroit Opera House (Capitol Theater) is the only building in this study that is not listed on either the State or National Register of Historic Places. Therefore,

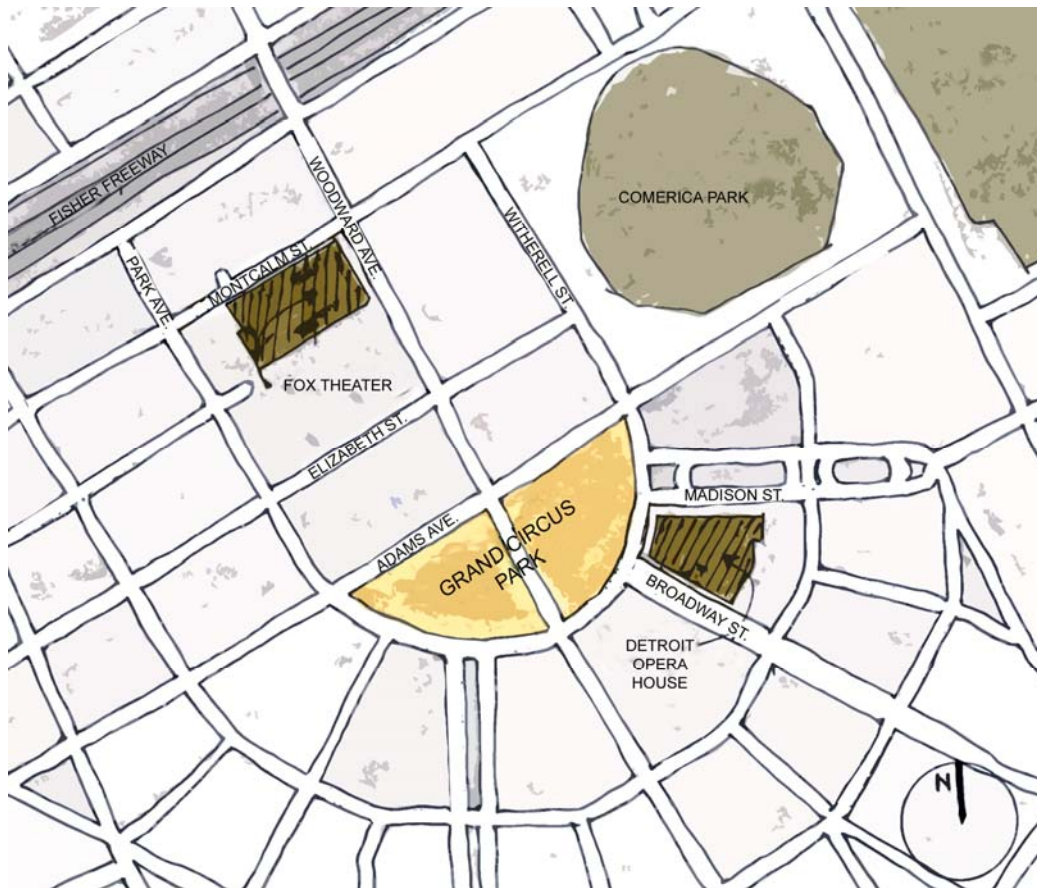


Fig. 7. Location of the Fox Theater.

available historical data on the building was much more limited than that of Orchestra Hall and the Fox Theater.

Fox Theater

The Fox Theater completed construction in 1928. Designed by Crane in the latter part of his career, he considered the Fox to be his greatest theatrical achievement.¹⁰⁵ The building as a whole consists of the theater proper, accompanied by an office building. Totalling ten stories in height, the structure occupies an entire city



Fig. 8. Front elevation of the Fox Theater, Detroit, Michigan. April 2008.

block in the Grand Circus Park sector of the City of Detroit (Fig. 7). The building is U-shaped. Its exterior is clad in terra cotta and brick, illuminated in the front by a gigantic marquee and sign.¹⁰⁶ The architectural styling of the Fox Theater is that of a “fantasia of Arabic, Indian, Oriental and Moorish influenced architecture.”¹⁰⁷

The office building section is ten stories incorporating the six-story lobby. The auditorium section behind the office section is approximately eight stories.¹⁰⁸

For the purposes of this study in comparison of theaters the focus of the history for the Fox will only be on the auditorium or theater portion of the building.

20th Century Fox tycoon, William Fox determined to build one of the most elaborate movie palaces of that time (Fig. 8).

With seating for over 5000 people the Fox Theater opened its doors on September 21, 1928.¹⁰⁹ In an on-line entry on a theater enthusiast website, Detroit News columnist, Laurie Marzejka, reported that the initial construction costs for the entire project were in the neighborhood of twelve million dollars and construction took 18 months to complete the self-promoted “Temple of Amusement”.¹¹⁰ The auditorium is a fan shaped volume that is 175 feet at its widest and 110 feet at its highest.¹¹¹

Although, C. Howard Crane is the Architect-of-Record for the Fox Theater, he turned to Eve Leo, wife of William Fox, for the inspiration of the interiors. Leo’s vision for the theater was to inspire “awe, excitement and mystery.”¹¹² Her label for the style of the interior design was “Siamese Byzantine.”¹¹³ Defined by a “60-foot high jeweled grand lobby designed to resemble an ancient Indian temple,” faux marble columns fashioned with plaster and trumploi painting, the interior is lavishly accented by gold leafing, “leather-lined elevators..., velvet throne chairs..., and intricately cast brass ornamentation...”¹¹⁴

Lennox-Haldeman Company of Cleveland, Ohio was awarded the contract for work, which included twenty artists creating “clay models of ornamental details that were later reproduced in plaster for the Fox Theater.”¹¹⁵ The duty of “executing all [of] the decorations and color effect throughout the building” was handled by the “Chicago

office of the Interstate Decorating Company of Rockford, Illinois”.¹¹⁶ The ornamentation and execution of the design as a whole was a collective effort of many professionals, with C. Howard Crane as the head of the project.

The Fox Theater was certainly a record breaker in theater construction for its time period. At the time of its opening it was home to the “longest free balcony in the world”.¹¹⁷ The auditorium space is column free, with the balcony is un-supported by columns at any point in the auditorium, providing every seat a clear view to the stage. The lobby also boasted the largest wool rug woven in the United States, at 3,500 square feet; the rug weighed approximately 3,000 pounds.¹¹⁸ The theater was also the first in the State of Michigan to install “an escalator and large passenger elevators.”¹¹⁹ The Fox Theater was also a pioneer in being the first movie theater in the world “to be constructed with built-in equipment for talking movies.”¹²⁰ These innovations and amenities catapulted the Fox Theater into a league of its own in Detroit.

The Fox Theater’s original function was primarily that of a movie palace, with its secondary function being a mixed live performance venue.

Throughout the Fox’s history, the local newspapers published several notable events and happenings that occurred at the theater. In 1937, Rex Grover a reporter for the Detroit News ran a special article covering the Fox’s Gae Foster Girls, “a chorus group that performed between movies,” suggesting that they passed their time by reading trash magazines and gossiping. The chorus group challenged the Detroit News to find six women to go up against six of their own women in a battle of intelligence. However, they added the stipulation that there were to be no Phi Beta Kappas in the group of

competitors.¹²¹ A couple of years later in 1939, the Fox also broke their own attendance record with such astonishing numbers that the Detroit News recorded that over a period of three days, 61,000 people packed the auditorium of the Fox to listen to Kay Kyser and his College of Musical Knowledge. The performers for this event included Benny Goodman and Tony Martin.¹²² Also in 1939, the Fox began participating in “Americanism Week”, a celebration in conjunction with Memorial Day. During this time, any new American citizen having received their citizenship papers prior to May 1st, could receive free* admission to the theater with proof of citizenship. (*At the start of World War II, a tax was levied on the price of a ticket of admission to public performances, and participants in the free admission program still had to pay the price of the tax.)¹²³

During World War II, American’s flocked to theaters to catch the latest in newsreels and to seek escape from the pressures of wartime hardships. To accommodate the massive Detroit work force that worked odd hours at many local manufacturing plants, the Fox Theater began offering the “War-Worker Dawn Show”. On February 19, 1943, the first night of the show, over 9,000 plant workers came to the Fox for a movie. The Fox encouraged their audience to “come as you are.”¹²⁴ On average during World War II, the Fox took in \$75,000 a week, due to the demand for news and movies.

The Fox hosted Motown’s very finest in the 1960’s. The musical show, Berry Gordy’s Motown Revue, featured over ten days, during the Christmas and New Year holidays, such artists as: The Temptations, The Supremes, and Smokey Robinson.¹²⁵

In the late 1980's, Michael and Marion Ilitch of Little Caesars International, purchased the Fox Theater and attached office building from the City of Detroit.

The Ilitch's working in partnership with developer, Charles Forbes, temporarily closed the theater and office tower to undergo restoration.¹²⁶ In less than a year, the fabulous Fox Theater opened its doors once again on November 19, 1988.¹²⁷ It is estimated that the renovation costs neared \$8.1 million dollars for the theater proper with the final total in the ballpark of \$35 million.^{128 129} According to the project monograph from Kessler|Francis|Cardoza Architects, the project budget was \$22 million.¹³⁰ The final cost can not be verified, as the Owner retains that information as confidential.

The architect's project monograph claims that, "approximately 80% of the theater's original finishes were saved." Due to the nature of historic structures the common creature comforts were not up to current standards, this lead to enlargement of the restroom facilities and an overall assessment of building codes and ADA conformance. Modern elevators were installed to help assist in the conversion of the mezzanine level seating being converted into new boxed seating. The backstage area of the theater was brought up to contemporary theater standards, creating flexibility in kinds of performers and artists that perform at the Fox. The stage can now host any show from "opera to dance." To "provide a central landscape focus in the office building" the existing light well received the addition of a four-story skylight.¹³¹

This building was renovated in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Additional noteworthy credits include: the inclusion on the Michigan State Historic Site Register (10/17/1991),

National Register of Historic Places (02/14/1985), a National Historic Landmark (1989) and has obtained tax credit certification.¹³²

The theater continues to attract today's top artists and performers. Modern artists and performers include: magician, David Copperfield; The Rocketts, and returning back to the Motown stage: Count Basie, Frank Sinatra and Sammy Davis, Jr.¹³³

As the nation's "second largest theater", the Fox Theater is consistently one of the nation's top grossing venue box offices.¹³⁴

5. INTERVIEWEES

The purpose of this section is to introduce the interviewees and the specific firms being interviewed. It identifies the body of work and experience each of the interviewed firms had prior to and following the theater renovation project under examination.

Orchestra Hall - Quinn Evans | Architects – Ann Arbor, Michigan

Quinn Evans | Architects (QE|A) was founded in 1984 by architects, David Evans and Michael Quinn.¹³⁵ QE|A is listed as the Restoration Architect of Record for the Orchestra Hall renovation project. Currently (2007), QE|A has three office locations, Ann Arbor, Michigan; Washington, D.C.; and Madison, Wisconsin.¹³⁶ There is a total of 60 employees divided between the three offices, including a total of 24 registered architects. Their body of work since its conception is primarily historic preservation based. David Evans estimated in a 1996 interview that 90 percent of their work is “with existing buildings.”¹³⁷ QE|A’s firm philosophy is “Preserving Our Cultural Heritage”.

At the time of renovation of Orchestra Hall in Detroit, Michigan, QE|A had not been formed. The office where this project initially started was Preservation Urban Design Incorporated (PUDI). Architect, Michael Quinn and David Evans worked for Richard Frank, AIA, at PUDI when the Orchestra Hall became an actual project. Quinn and Evans then broke off from PUDI to form Quinn Evans | Architects in 1984. This project then spanned the two offices until the completion of the first phase. In total, QE|A has been involved with over one dozen theater renovation projects.

Quinn Evans / Architects - Interview

Date: November 27, 2007

Location: aboard a private jet from Bangor, Maine to Ypsilanti, Michigan

Length of Time: approximately, 1 ½ hours

Participants: Lesa Rozmarek (researcher)

Michael L. Quinn, FAIA (Quinn Evans | Architects)

Detroit Opera House - Albert Kahn Associates – Detroit, Michigan

Albert Kahn Associates (AKA), the legacy firm founded by famed industrial architect, Albert Kahn, was established in 1895.¹³⁸ Joining Kahn in this early company was George W. Nettleton and Alexander B. Trowbridge. All three men left the architectural office of Mason and Rice to open their own office. This partnership only lasted for three years, Nettleton and Trowbridge left Kahn in 1897.¹³⁹ Albert Kahn was the architectural equivalent of Henry Ford in the facilitating the construction and implementation of modern assembly line production.¹⁴⁰ While AKA's body of work is more widely known for designing automotive facilities, they have also produced many "Classical Masterpieces."¹⁴¹ These structures include: the Fisher Building, Detroit, Michigan; and the University of Michigan's Clements Library and Angell Hall.¹⁴² AKA's strong body of work and loyal clients has sustained this firm for over 111 years.¹⁴³ This is evident in their mission statement: "It is AKA's goal to be our clients' first choice, by continuously improving the quality and value of our services, while providing professional satisfaction for our staff and financial viability for our company."¹⁴⁴

Albert Kahn Associate's role in the renovation of the Detroit Opera House was that of Architect of Record.

At the time of interview, AKA could not locate any information regarding the Detroit Opera House project. I was referred to an architect that had once worked at AKA, but had since moved on to a different company. That architect referred me to Kimberly Johnson of Kimberly Consulting, Inc. of Pontiac, Michigan. Kim was the managing director of the Detroit Opera House throughout construction and was available to discuss the process as she witnessed it.

This interview and case study is not as pure as the other two case studies. Instead this case study is from the client's point of view. The information obtained from this interview can provide to this overall study an idea of what worked and what did not work from the Client's perspective. Providing this point of view can help us (as architects) in refining our written and spoken communications with our Client's and interested lay persons.

Albert Kahn and Associates - Interview

Date: February 2, 2008

Location: Chili's Restaurant

Length of Time: 2 hours

Participants: Lesa Rozmarek (researcher)

Kimberly Johnson (Kimberly Consulting, Inc.)

Fox Theater - Kessler | Francis | Cardoza Architects – Detroit, Michigan

Kessler | Francis | Cardoza Architects (K|F|C), opened its doors in 1955 as Meathe, Kessler and Associates, under went a name change in 1968 to William Kessler and Associates, and in 1999, made its final name change to Kessler | Francis | Cardoza Architects.^{145 146} At the time of the renovation of the Fox Theater in Detroit, K|F|C was known as William Kessler and Associates. K|F|C closed their doors for good in spring of 2004. Principals, Edward Francis and James Cardoza, along with two employees then joined Gunn Levine Architects in Detroit, Michigan. Edward Francis and one of the employees are the only two remaining K|F|C architects with Gunn Levine Architects.

K|F|C's body of architectural work ranged from ultra modern new construction to highly detailed historic preservation projects. K|F|C's architectural philosophy was, "At Kessler | Francis | Cardoza design quality is not a commodity, it is a commitment to understanding client values and requirements and providing unique solutions with insight and absence of preference for a style, a material, or concept."¹⁴⁷

K|F|C is listed as the Architect of Record for the renovation of the Fox Theater located in Detroit, Michigan. At the time of renovation of the Fox Theater, K|F|C had between 10-20 employees in their Detroit office. The principal architect from K|F|C was Edward Francis, FAIA. The total number of theater renovation projects Edward Francis of KFC has been involved with, prior to the start of the Fox Theater renovation is estimated at five theaters. In total, Francis has been involved with 35 theater renovation projects with twelve theaters completed prior to the Fox Theater renovation process.

Kessler / Francis / Cardoza Architects - Interview

Date: December 5, 2007

Location: Roma Café, Detroit

Length of Time: approximately, 2 hours

Participants: Lesa Rozmarek (researcher),

Edward Francis, FAIA (Kessler | Francis | Cardoza Architects)

Lynne Merrill-Francis, (AIA Michigan, Public Awareness)

6. DISCUSSION CONTENT AND DOCUMENT REVIEW

**To maintain consistency throughout the document Orchestra Hall's renovation will be represented by Quinn Evans | Architects (QE|A), the Detroit Opera House's renovation will be represented by Albert Kahn Associates (AKA) and the Fox Theater's renovation will be represented by Kessler | Francis | Cardoza Architects (K|F|C). As a reminder, QE|A is associated to PUDI through Michael Quinn, the architect that produced the pre-design while at PUDI before opening QE|A with fellow architect, David Evans. Also, K|F|C was formerly known as, William Kessler and Associates, but was changed to Kessler | Francis | Cardoza Architects upon the retirement of William Kessler.

Documentation

The beginning of this paper discussed many different types of documents that are produced during the pre-design phase. They were (but not limited to) the master plan, the historic structures report, comprehensive conditions analysis, client visionary report and development plan. The buildings studied for this thesis each underwent a different approach to pre-design documentation. This demonstrates the validity of the discussion of variety of pre-design documentation provided by Swanke Hayden Connell Architects within the literature review. Even though each of the theaters had a unique renovation experience, all of the theaters are considered successful renovations. The evidence of the success of these renovations comes from the longevity of the renovation owner's

occupancy. For over twenty years these theaters have anchored the rejuvenation of the City of Detroit, providing an attraction and reason for the suburbanites to visit the City.

For Orchestra Hall, PUDI produced a Master Plan document that was funded by Save Orchestra Hall Incorporated and grant monies from the Heritage Conservation and Recreation Service¹⁴⁸, U.S. Department of the Interior in conjunction with the Michigan History Division, Michigan Department of State.¹⁴⁹ The Detroit Opera House went through a succession of architects and designers, ending with Albert Kahn Associates completing the construction process. It was said during the interview with Kimberly Johnson, that three feasibility studies were conducted for the building; however, none of them were ultimately used¹⁵⁰ The document that William Kessler and Associates produced for the Fox Theater was a Design Concept Analysis. That analysis was completed in 1987 and funded solely by the client, Little Caesar Enterprises Incorporated.¹⁵¹

As discussed in the Introduction of this study, there are many consultants typically brought on board for a theater renovation. Acknowledgments in the Orchestra Hall Master Plan included: Preservation Urban Design, Incorporated (architects), Jaffe Acoustics, Inc. (acoustical consultant), Roger Morgan Studio, Inc. (theater design consultant), Potapa Mancini and Associates, Inc. (mechanical consultant), Atkinson Associates (electrical consultant), and Robert Darvas and Associates (structural consultant).¹⁵² The records for the Detroit Opera House by Albert Kahn Associates were not available for review and memory of the project was scarce. The interview with the (at the time) Managing Director of the Detroit Opera House, Kim Johnson, revealed that

a large portion of the project was performed from a design-build strategy. In the Design Concept Analysis prepared for the Fox Theater, acknowledgements included: William Kessler and Associates, Inc. (architect), Ray Shepardson (theater systems/restoration), Hoyen-Basso Associates, Inc. (mechanical/electrical engineers), McClurg Associates (structural engineers), William Johnson Associates, Inc. (landscape architects), Richard L. DeLisle, Inc (specifications), Richard Frank/Elisabeth Knibbe (historic certification), Edward Colbert Systems (cost estimating), and Parliament Construction (construction management/cost estimating).¹⁵³

The establishment of historical significance in the pre-design documentation is a common topic that provides the basis for the argument for why the architect is championing a quality renovation effort. The Fox document dedicates one section within the body of the report to explain and describe the historical significance of the structure.¹⁵⁴ In addition, the appendix contains the Part Two documentation for NPS, Historic Preservation Certification Application. This appendix goes into great detail describing every single aspect of the structure that is unique, character defining and worthy of special attention during the renovation process. The Orchestra Hall document continually weaves references to historical significance throughout the entire report. Often making reference to each of the Secretary of the Interior's Standards for Restoration and Rehabilitation how the building applies to each standard. Establishing the historical significance of a structure prior to renovation work is a vital step in informing the entire project team as to the level of sensitivity that must be paid attention to any new work that is to be performed. Destruction of a historically defining

characteristic could lead to revocation of historic tax credits, loss of an irreplaceable element and added project cost in attempting to correct the loss of historic significance.

Programming

Function. The vision for the Fox Theater as set forth by the Owner was to function as a presenter, whereas, Orchestra Hall functions as a producer theater. The Detroit Opera House reopened as a hybrid of the two, functioning as a producer/presenter theater. The difference between a presenter and a producer is that one presents productions and one produces its own productions. For example, the Fox, (a presenter) is simply a shell. Performers and/or productions come in with all equipment and actors set to go, perform and leave; with revenues from ticket sales divided between the production company and the house box office. A producer theater serves itself, meaning that the house company either shares or co-produces with additional companies or with same sized stages, productions, costumes, scenery and music. Orchestra Hall is home to the Detroit Symphony Orchestra; occasionally, there maybe an outside performer on the schedule, but their revenue does not rely outside performers. The Detroit Opera House being a hybrid of the two, sees that their own needs for the Detroit Opera Theater are met on the schedule and additional programming is built into the schedule, approximately 50/50 split in time.

The current functions for the Fox Theater and Orchestra Hall closely relate to their root functions, while the current function of the Detroit Opera House is far from the intent of its original function as a movie palace.

To understand how the theater is to function ultimately goals and objectives must be established at the start.

In both of the pre-design documents for the Fox and Orchestra Hall goals and objectives were established jointly by the client and architect to serve as measurement of accomplishment from the beginning of the project to its eventual completion and to set the overall project direction. In these documents the goals were set first, and then objectives to obtain that specific goal were identified. The Fox Theater's goal was "Restoring the Fox to its original grandeur while creating a world headquarters for Little Caesar Enterprises [to] serve as a catalyst for the further redevelopment of Downtown Detroit."¹⁵⁵ Orchestra Hall chose for its goal a much simpler, "To develop for Orchestra Hall a vital role as a home for music in Detroit, in Michigan and throughout the World."

¹⁵⁶ Both of these mission statements recognize the depressed status of Downtown Detroit and seek to contribute to the solution of creating a more vibrant Detroit.

The categorization taken by K|F|C and QE|A differ dramatically in the analysis of defining objectives. K|F|C approached the objectives from a broader standpoint that would work for almost any building type. They broke up the objectives into the categories of: *Form, Function, Time and Economy*. From there under each category they then describe each objective that conforms to that particular category.¹⁵⁷ QE|A's approach to defining objectives was more focused on the building type and specific requirements related to theater renovation and operation. The categories listed in their master plan are: *Performance Characteristics, Audience Satisfaction, Historic Integrity, Operations and Program*.¹⁵⁸

The following are examples of objectives listed in the pre-design documents of objective category headings and objectives listed within the categories (Table 2):

Table 2. Examples of Table of Contents in pre-design documents.

Orchestra Hall Master Plan - QE|A¹⁵⁹

Performance Characteristics

- *To have performer facilities adequate to conveniently serve the types of performances anticipated.*
- *To preserve the traditional acoustical excellence which enhances performer satisfaction.*
- *To have adequate and flexible theatrical lighting.*

Audience Satisfaction

- *To gain an awareness in the Detroit community of the attributes of Orchestra hall.*
- *To have sanitary and attractive restroom facilities.*
- *To achieve interior spaces which are illuminated with historical and functional appropriateness.*

Historic Integrity

- *To have the degree to which history should influence decisions confirmed.*
- *To achieve a revitalized exterior appearance which creates public appeal, while respecting historical authenticity.*
- *To achieve the appropriate balance between historical significance and function on the treatment of interior spaces and details.*

Operations

- *To attain necessary facilities so financial stability can be realized.*
- *To have sufficient and efficient operation of space for non-audience and performance uses.*
- *To establish feasibility of developing and educational function.*

Program

- *To attain suitable liaison with the Detroit artistic community.*
- *To achieve the appropriate character of programming which has good taste within the physical constraints of the building.*
- *To develop the capability of implementing the GOAL.*

Fox Theater Design Concept Analysis – K|F|C¹⁶⁰

Form

- *Restore the Fox Center Building to its original grandeur.*
- *Because the Fox Center Building is listed on the National Register of Historic Places, restoration work is to be completed in accordance with*

Table 2. Continued.

The Secretary of the Interiors, STANDARDS FOR REHABILITATION AND GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS.

- *Provide quality facilities for public, performers, technicians and employees.*

Function

- *Theater to be used for popular entertainment and possibly for Broadway road shows.*
- *Club menu to be limited to snacks and finger foods.*
- *The office building portion of the building will be 100% protected by a sprinkler system.*

Time

- *Theater, Club and Site Development to be completed and open to the public on September 21, 1988, the 60th anniversary of the Theatre's original opening night.*
- *Due to short design/construction timetable, a fast-track, phased construction management building process will be required.*
- *Remaining elements of the building can be completed thereafter with construction work phased to minimize disruption during entertainment events.*

Economy

- *In order to take economic advantage of the Tax Reform Act allowing and additional 10% first year depreciation, the project should be designated as a certified rehabilitation by the U.S. Department of the Interior.*
- *Materials and finishes should be carefully considered for their effect upon minimizing maintenance cost.*
- *Bid process to be used for award of construction sub-contracts.*

According to Kim Johnson, the Detroit Opera House had internally defined their goals and mission statement prior to contacting or hiring an architect. There were three main driving factors for space Michigan Opera Theater (MOT) wanted to fulfill. They were: (1) a performance space that supported an unamplified art form (being opera), (2) to have a pit that could accommodate a 105 member orchestra and it must have a stage and (3) proscenium the same size as the partner theater companies that they would be sharing scenery and costumes.¹⁶¹ Johnson explained that in theatrical art as an artist,

“What you can be, is completely linked to the space you have access to.” That there must be cohesive teamwork and understanding between the “Applied Artist” (architect) and the “Performing Artist” (space user) and that in order for the project to succeed there must be “...complete and unwavering commitment to the art form.” She said that this principle goes for any theater restoration that she has been involved with.

Square Footage. The master plan document does not go into detail as to existing square footages of the Orchestra Hall building, but the “Implementation” section of the report discusses work to be performed to accommodate specific needs within each phase. In the first phase, constructing temporary spaces is the key to getting the building functioning. The second phase is where significant square footage is added to the program to greatly enhance both patron and performer comfort and considerable site development also occurs. In phase three, the expansion of the building continues to accommodate for additional theater space and rental spaces.¹⁶²

MOT determined that, in order for the Detroit Opera House to be feasible, MOT needed to acquire seven properties. The entire complex spans three buildings, one of the buildings being a new 80,000 square foot addition. The original building was amputated behind the proscenium arch and a new stage house was constructed to accommodate the new function. The orchestra pit was also enlarged to accommodate for the 105 person orchestra required for ballet. The pit was actually designed by the conductors that would be utilizing the orchestra pit. The stage was completely replaced to also accommodate the demanding loads of ballet and opera.¹⁶³

The analysis document for the Fox Theater is extremely in-depth with breaking down required square footages versus the existing square footage.¹⁶⁴ The program in this document has been thoroughly defined to a point where secondary function necessary for specific spaces to operate smoothly have been noted and square footage allotted. For example, one reallocation of space within the theater was to create a club level in the mezzanine seating. The club level requirements, such as private club, public lounge, conservatory, club manager, public toilets, kitchen, staff lockers and storage spaces are clearly defined and required square footage has been noted in the document. Since, the program is so clearly defined in this document it is important to note the separate space headings as to give an idea of the types of spaces that were and might be applicable to other theater buildings. The list is as follows: Club, Maintenance, Show Operations, Theater Administration, Accounting, Architecture, Corporate Communication, Day Care Center, Design, Executive Corporate, Finance, Franchise Sales, Human Resources, Information Services, Legal, Marketing, Research and Development, and Security. It is important to note that this building not only serves the Fox Theater functions, but it is the headquarters of Little Caesars International. The square footage required by the theater function came in at 22,845 square feet, whereas, Little Caesars space requirement came in at 38,155 square feet. The architect then assumed that that space was only 75% efficient and the grand total for the project was assumed at 81,300 square feet.¹⁶⁵

Patron/Performer Comfort. When renovating a historic theater there are inevitable concerns about adaptation to modern standards for usage and comfort.

The Fox Theater Design Concept Analysis, provided an in-depth account of the existing interior spaces and the treatment as to be applied in regards to the renovation efforts, however, the Owner directly hired, design-build theater restorer, Ray Shepardson to personally handle the theater proper design decisions. Therefore, no mention was ever made in the document as to patron/performer comfort. Edward Francis noted that it was determined that the existing seating was salvageable, as well as the seating configuration, and that there only need to be hardware upgrades to the existing seat pan lifting system.¹⁶⁶ Francis also discussed the decision to create loge box seating on the mezzanine level. In keeping with updating trends in entertainment venue demands, the concept analysis examines the building-out of box seating in a private suite style that you would typically see at a basketball arena. This area also provided private dining facilities and restrooms for its patrons. By adding this type of seating, it provided the modern level of luxury entertainment viewing and created an additional level in ticket and concessions revenue.¹⁶⁷

The Orchestra Hall was the only document to make specific reference to improving items related to patron/performer comfort. In Part II Rehabilitation Considerations, one section is titled Audience Comfort and another is titled Performance Capability.

Audience Comfort discusses seating and audience amenities. The seating in Orchestra Hall was not replaced, but instead rehabilitated. As discussed in the Master Plan, the seating was found to still be at a comfortable distance and size for modern standards (at the time) and therefore recommended that the rehabilitation of the existing

seating continue. Where seating was scavenged from the balcony to replace damaged seating on the main floor, it was recommended that replica seating be manufactured or era appropriate seating be installed in similar pattern and fashion as the original seating.¹⁶⁸ The second part of Audience Comfort, audience amenities, noted that when everyone is assembled in the auditorium the space is adequate, however, at an intermission the patron spaces, i.e., lobbies, rest rooms, lounge facilities and check rooms, are quite the opposite.¹⁶⁹ This section analyzes the existing sizes of the spaces in comparison to modern standards and the concern for not meeting barrier free access requirements.

The topic of Performance Capability discusses the impact of the number one goal of Save Orchestra Hall, Inc., "...that without compromise no rehabilitation recommendation should be made that could in any way have an undesirable effect on the Hall's fine acoustic quality."¹⁷⁰ There is commentary on the existing amenities as to accommodate a variety of different kinds of performances, amenities including, stage house "which permits flying of scenery", and "adjustable orchestra pit with a two-part pit lift."¹⁷¹ This section also goes on to point out the short-comings of the performer support spaces. Support areas such as the stage area (off stage wing space), orchestra pit mechanical movement system, orchestra shell, stage rigging, stage lighting, stage draperies, sound system, stage control booth, dressing rooms, stage area receiving area, rehearsal and warm up rooms, green room, general storage space, electrical shop/storage, carpenter's shop and circulation space were all broken down as necessary spaces to

create or spaces that required renovation to comply with modern or current performer standards.¹⁷²

The solution to many of these issues discussed in the master plan were to be resolved by the construction of additional square footage. We see this solution also utilized at the Detroit Opera House. In the case of the Detroit Opera House, the design approach to creating performer comfort was more aggressive in spatial manipulation. The orchestra pit was designed by the conductors that would be utilizing the space and the interior design of the addition was driven by the requirements set forth in order to share productions. The remainder of the auditorium was renovated to support the unamplified sound used in opera performance.¹⁷³ As discussed with Kimberly Johnson, in regards to the Detroit Opera House, the art form came first – form followed function, but she said that code is everything.¹⁷⁴

Code Compliance/Life Safety/Barrier-Free Accessibility. Historic buildings pose an interesting challenge to designers to provide for code compliance, adequate life safety strategies and barrier-free accessibility. During renovation of historic buildings every effort should be made to meet current codes. However, in some instances variances may be granted for items that do not pose a significant threat to the user. Challenges that are common include, but are not limited to: absence of elevators, dangerous stairs, inadequate number of restroom facilities, insufficient exiting strategies, archaic electrical wiring and insufficient seating for physically handicapped patrons.

The master plan for Orchestra Hall is very general in the discussion of code review and barrier-free accessibility. The master plan focuses mainly on the inadequate

number of restrooms, position of restrooms and future expansion to provide for an elevator to inaccessible levels. There is discussion for the possibility for acquiring a variance for the upper levels until there were funds available to expand the building. There is no mention of the relationship between the stage house and the auditorium in the master plan. The number of references in the text to “future expansion” or “future additions” seems to leave the majority of code review and decisions on vertical circulation to the architect responsible for future phases.¹⁷⁵

In the design concept analysis document for the Fox Theater, K|F|C provided not only a statement on which code would be followed, but provided a detailed code review analysis in the appendix. There is mention made of intending “to comply to the fullest extent economically and functionally practical, to improve the safety of the Fox Center.”¹⁷⁶ Edward Francis confirmed that the Fox Center building was fortunate because where it did not conform to code, it was usually adaptable in an attractive manner.¹⁷⁷

The Detroit Opera House faced a number of challenges. Three buildings (the historic theater, the new stage house and an adjacent building) were being connected at three different elevations posing an interesting challenge for compliance with barrier-free vertical and horizontal circulation. This challenge was dealt with by a series of creative ramps and an elevator. Kimberly Johnson said that one of the most surprising barriers that they ran into was that the City Fire Marshal required that there be doors added to the entrances of the box seating. Not only did the addition of the doors add to the final price of the project, but posed an issue with finding an appropriate silent

hardware for the door so that if they were opened in the middle of a performance it would not be a disruption. These were the real challenges that were incurred in the field for this project. Johnson estimated 30-40 variances were sought for the operation of this project.¹⁷⁸

Technology and Systems

Exterior Systems. As a part of QE|A's master plan, they provided a general evaluation of the exterior conditions of the building. Topics identified in the exterior assessment were Masonry (including, limestone, terra-cotta, face brick, common brick and examination of a former party wall), Entrances (including store fronts, ancillary entrances and stage doors), Fenestration, Marquees, Emergency Balcony Exits, Roof and Ornamental Iron conditions. Each of these topics gave a general assessment and subsequent recommendations.

The K|F|C concept design analysis, however, does not go into any great detail in the body of the report in regards to the exterior systems and conditions.¹⁷⁹ The Federal Tax Certification documentation states that the terra-cotta was to be repointed as part of the restoration work. This was confirmed by Edward Francis. Francis also explained that the roof needed some work and was repaired where necessary. His tip of the day, he learned after evaluating the Fox's roof was, "Always check the attic before you go up on the roof." Francis explained that following the inspection of the roof, it was discovered that in many of the "soft" areas the substrate was dangerously deteriorated. He also explained that the focus was not so much the exterior, because it was in relatively good condition. Many of the desired exterior restoration items went on a "to do" list and have

been completed over time.¹⁸⁰ Francis' charge was to determine how the Fox Theater building could be adapted internally to accommodate Little Caesars International, as well as, providing an adequate and safe venue for Olympia Entertainment.

At the Detroit Opera House, the historic terra cotta façade was restored. By the request of MOT, a marquee was intentionally left absent from the façade. Meaning, the older unoriginal fabric was removed, but the original marquee was not reconstructed. The MOT decided to implement minimalistic modern signage on the historic facades. The new addition of the stage house is a drastic contrast from the white terra cotta façade in that it is off-white EIFS. Johnson said that the decision to install the EIFS was purely from a value engineering stand-point. The original design called for a stone cladding system. She said that it was a painful decision, but in the end the MOT decided that that money was better spent on systems that would help promote the interior experience.¹⁸¹

Theater Systems. Reports for both the Fox Theater and Orchestra Hall reviewed the existing theater systems and strategies for restoring or replacing such systems. There are distinct differences in how this information within each report in how it is presented.

In the Orchestra Hall master plan the information in regards to the theater systems is scattered throughout the document. Part II - Restoration Considerations discusses theater systems topics of acoustics, and lighting. Part III – Rehabilitation Considerations, has a section titled “Performance Capability” that specifically targets the stage area, orchestra pit, orchestra shell, stage rigging, stage lighting, stage draperies, sound system, stage control booth, dressing rooms, stage area receiving area, rehearsal and warm-up rooms, green room, general storage space, electrician shop/storage,

carpenter's shop and necessary circulation space for performance function.¹⁸² Being that Orchestra Hall is renowned for its superb acoustical properties it was important to express diligence in work to be preformed in relationship to preserving or enhancing the acoustics. The original lighting scheme was also an important feature to preserve. The reasoning given by the report is that it is "surprisingly adequate" and that the majority of the fixtures still existed and where they were missing historical photographs were available to provide for replication of the missing fixtures.¹⁸³ The rehabilitation consideration items are presented in a very succinct manner of listing the item, stating the present condition of the item and the recommendation.¹⁸⁴ This direct format is very similar to how a HSR is formatted, condition and recommendation.

One of the most appealing features of the Capitol Theater (Detroit Opera House) that attracted MOT to purchase it for their new home was the fact that it had superb sightlines and acoustics that were satisfactory for their use.¹⁸⁵ In the interview with Kimberly Johnson, we discussed how the theater upon receipt had roughly 90% plaster loss, the original seats were intact, for the most part and the original lighting was still in place.¹⁸⁶ All of these items would be restored or rehabilitated during the renovation.

Not surprising, shortly before opening night as the plumbing was being put back into service and the contractor went to tie into the main sewer line, it was discovered that the Opera House was still serviced by wooden water mains and wooden sewer lines. This is a relatively common event in the City of Detroit, due to the fact that many of the buildings have not been heavily renovated since their initial construction and the City is slowly phasing out antiquated infrastructure. Immediately, additional work was required

to remedy this problem. A newer sewer line was located up the street from the Opera House, thus began operation on the concrete and asphalt roads and sidewalks to replace the antiquated wooden sewer lines.¹⁸⁷ On opening night it was said that the theater was “operable.”¹⁸⁸

The Fox Theater’s document keeps this information within the appendix. Appendix A-11-3 Theatre Systems Report has a detailed account in which it breaks down the systems into the following topics: Pit, Seating, Rigging, Stage Lighting, Electro Acoustics, Natural Acoustics, Stage, Organ, Decorative Lighting, Furnishing, Plaster, Paint, Carpeting, Draperies, Doors, Marble, Glasswork and Mirrors, Restroom Finishes, Concessions, Handrails and Wood Finishes, Dressing Rooms, Office Lobby Ceiling, Office Lobby Travertine, Brass, Projection Booth/Equipment, Elevators and Directional Signage. Within each of these categories the condition of the finish(es) is recorded and where known it is noted if an original finish is missing. Appendix A-11-1 Federal Historic Certification, Part 2 of the Historic Preservation Certification Application then covers the condition and the treatment that most of the items discussed in Appendix A-11-3 are to receive.¹⁸⁹

During the interview with Edward Francis, we discussed the treatment of the interior finishes. He said that the theater proper was not in bad condition and more or less needed minor repair and major cleaning. The remainder of the office building was to be “gutted”, with the original corridors remaining intact. He also explained that the Owner directly hired a Theater Systems/Restoration consultant. Francis said that there were challenges in working with the consultant, due to the fact that he was not formally

trained in architecture, sensitive to preservation practices and theater design (i.e., creating favorable sightlines and preservation and restoration of architectural elements). This gap in knowledge resulted in miscommunications, leading Francis to having to spend more time with the Owners explaining that the right way to achieve proper restoration and a quality theater experience is not always the friendliest to the pocket book. In the end, some battles were won and some were lost. However, Francis went on to explain that where the team veered from the pre-design document and shortcuts were taken, it came back to haunt the team on Opening Night. A few examples that he gave were that the bathrooms flooded, the MEP systems (that were design-build) were unbalanced and the motor for the organ caught fire.¹⁹⁰

The significance of the pre-design document becomes clear when you read that the sewer system noted as being in poor condition¹⁹¹, the existing duct system was slated to be rebalanced and any new work to be balanced¹⁹² and was noted that the Wurlitzer organ “...is in playable condition, but needs some attention.”¹⁹³ If the team had remained in parallel to the Design Concept Analysis, the Opening Night disasters may have been avoided.

Engineering. As discussed in the section above, engineering is an important subject in a historic theater renovation. In all theater renovations reviewed for this thesis engineers played a large role in creating a space that was safe, comfortable and enjoyable. Engineering consultants used in many of the renovations included: structural engineers, mechanical engineers and electrical engineers.

The Orchestra Hall master plan dedicates three sections to engineering systems: Structure, Mechanical, and Electrical. Under the section, Part II Rehabilitation Considerations, the three disciplines provided the following discussions: structural, mechanical and electrical.

In conjunction with Robert Darvas and Associates, QEA (PUDI) conducted a structural walk-through analysis that looked at load bearing exterior walls, reinforced concrete slabs, structural steel framing and interior load bearing walls.¹⁹⁴ Specific to theater renovation special attention was given to the “mezzanine box area steel framing” and the grid iron steel was inspected. These specific areas area also noted to have seemingly significant water damage. The mezzanine was noted as needing additional study upon commencement of work, and complete replacement of the grid iron was recommended due to the higher load demands of modern show production.¹⁹⁵

The mechanical systems analysis performed along with mechanical engineer, Potapa Mancini and Associates, Inc., analyzed the plumbing, sanitary system, storm system, domestic cold water system, domestic hot water system, natural gas service, plumbing fixtures, vacuum cleaning system, fire protection system, heating and ventilation system, building heating system, building ventilation system, air conditioning and temperature control systems.¹⁹⁶ The mechanical analysis makes mention of a study that was conducted in 1973 and notes that some of the work has been performed from that study, however also notes that that work was mainly to make the building purely functional and there are major updates yet to be performed. The condition of the above mentioned systems and recommendations by the mechanical consultant are the content

of this section. It is interesting to note that solutions to code violations involving egress were discussed in the fire protection systems section. By strategically installing fire suppression systems to protect the antiquated structure and emergency passage ways, the historic fabric and design of the structure would not have to be altered to meet modern codes.¹⁹⁷ This section breaks down the air movement system and climate control system in terms of their original function, current condition, and recommendation as to what work should be performed.

In the electrical section we also see the same approach as we have seen in the two previous sections. The original function is presented, the current condition is stated, the modern standard is stated and the recommendations are made. The electrical engineering consultant, Atkinson Associates, with the architect, discuss the electrical service in terms of billing from the service provider; electrical distribution in relation to emergency lighting, circuitry, telephone systems, production communications, amplification systems, fire and emergency alarm equipment, and sound and television recording.¹⁹⁸

The engineering portion of the Orchestra Hall master plan document is unique in comparison to the Fox Theater document from the stand-point that the engineers produced a product that provided creative solutions to, seemingly otherwise, detrimental code violations. Part IV Master Plan Recommendations, repeats these three disciplines and discusses their final recommendations and presents them in relationship to urgency, code and future expansion.¹⁹⁹

The Fox Theater in conjunction with KFC, the following engineering consultants: Hoyem-Basso Associates, Inc for mechanical and electrical engineering and McClurg Associates for their structural engineering. There is a summary of the engineering recommendations in the introduction of the design concept analysis, along with a more expanded explanation and scope of work in the Existing Conditions sections, and finally, the full engineering reports for mechanical and electrical are provided in the appendices.

The structural engineers prefaced their work by noting that “[t]he Fox Theatre Building is in excellent structural condition...” and went onto note repairs or considerations that would need to be addressed in design. However, this section is significantly shorter and less detailed than the other engineering sections.

During the interview, Edward Francis talked about issues they ran into with the balcony. As the longest free-spanning balcony in the world (at the time of construction), it developed a reputation as behaving like “Galloping Gertie.”²⁰⁰ Francis said that the University of Michigan, School of Engineering, had several graduate students study the balcony and the affects of the occurring harmonic motion in relationship to its structural safety. The student and their professor discovered that when the balcony “got going” there proved to be a two-plus foot difference in its relationship to a horizontal plane. The group also determined that the steel had not yet yielded, and the only damage had been to the plasterwork. The innovative solution the group and engineers developed was the installation of a horizontal dampening system.²⁰¹ Francis believes that this is the first installation of a horizontal dampening system for this purpose and mentioned that

the \$25,000 to conduct the study, along with the \$25,000 to install the system has more than paid for itself in terms of safety and user comfort.²⁰² This condition was not mentioned in the pre-design document. However, Francis wanted to draw attention to this matter because it is an element within historic theaters that should be given attention in pre-design to determine overall structural integrity of the building.²⁰³

The mechanical/electrical engineering consultant provided a substantially more detailed report and analysis for the Fox Theater. Their report included a schematic design for the plumbing and ventilation through diagrams that were provided. In detail, they inventoried the existing systems including installation date (year), capacity, condition and recommendations. In addition, scope of work for the recommendations is given in a specifications type format that includes required demolition work, specific areas and their treatment, and associated work diagrams.²⁰⁴

Given that this project was fast-tracked and this report is highly detailed in scope-of-work, it was unexpected to review the highly detailed report and work submitted by the mechanical/electrical engineer, but it was odd to see how little structural analysis was performed in this document given the age of the structure, its known balcony condition and the large amount of liability that come with an auditorium that holds over 4,500 people.

The Detroit Opera House, as previously mentioned, was a design-build project. During the interview with Kimberly Johnson, she did not have very much information on the engineering work. What she did remember was provided in terms of the general scope of work was performed. As far as mechanical engineering issues they had to deal

with, as previously discussed, they had run into issues involving tapping into antiquated sewer systems. She also discussed the fact that the stage was rebuilt because for the new function of the building was to accommodate both opera and ballet. Johnson talked about the need to calculate the loading of 80 ballerinas on point, along with the various trolleys and other scenery and equipment.²⁰⁵ This interview provided an insight to the engineering required in a pre-design document to examine what the original function was and compare it to the new function. In this case the entire stage needed to be rebuilt and structurally redesigned to accommodate the demanding loads.

Finishes and Decorative Elements

Hazardous Materials. In older buildings hazardous materials are a very real concern. Materials such as, asbestos, lead, and P.C.B.'s are among the most common hazardous materials found in older buildings. As a sub-topic discussed during the interviewing process, dialogue of mitigation of hazardous materials in the documentation does not occur because of legal liability. Hazardous material mitigation is the responsibility of the Owner in the State of Michigan.

While discussing hazardous material mitigation with Edward Francis, he mentioned that mitigation techniques can be very creative. Francis said that at the Fox Theater, all of the hazardous materials were encapsulated within the building.²⁰⁶ Additionally, it is important to note that during the pre-design inspection process persons walking through the building should protect themselves from friable materials containing hazardous materials or by entering areas that may contain harmful airborne

contaminates. These precautions may vary based upon the state of the building at time of pre-design.

Original Fabric vs. New Fabric. Original fabric versus new fabric can be addressed in a couple of different contexts. The first being from the standpoint of actual what finishes or materials are new and which ones are to remain. The second context being a much broader scope of work, positioning the historic building footprint against the possibility of adding new structure to historic building. In either case, both of these contexts are addressed in both pre-design documents for the Orchestra Hall and the Fox Theater. The Detroit Opera House, while having no pre-design document to analyze, also dealt with the addition of new fabric from both contexts.

Orchestra Hall's master plan made clear from the very beginning of the document that there was a future requirement of additional square footage to the building. In Part IV Master Plan Recommendations, the recommendations include "augmentation" of the original floor plan in specific areas and for SOH to plan for the necessary future expansion to the building.²⁰⁷ The document also recommended that any salvageable original fabric must be retained and where necessary the replacement fabric was to "[duplicate] the original as closely as possible."²⁰⁸ From the preservation stance a non-permanent solution to supplemental lighting was made that any additional lighting in the auditorium be movable floor lamps. The point being that this space would not be harmed by the addition of permanent new anachronistic fabric. The overall position that the architect took in this document is that any new fabric to be added should be designed



Fig. 9. Madison Street elevation of the Detroit Opera House, Detroit, Michigan. April 2008. New fabric versus the existing fabric.

and installed in a historically correct or sensitive manner as to enhance the space or performance and to not affect the acoustics.

In the Fox Theater design concept analysis, specification of treatment to the historic material is in appendix A-II-1 Federal Historic Certification; this appendix is the Part II application. The Part II application is very specific in the treatment of materials. It is important that these specifications are followed very closely to qualify for Tax Credit Certification.²⁰⁹ At the Fox Center Building, the upper floors were originally intended to function as flexible office configuration. This was a fortunate occurrence for Little Caesars International, because any of the fabric behind the corridor walls could be reconfigured and they would still retain their tax credits.²¹⁰ In addition, the architect decided that as a way to create a public space for circulation or for use of employees and to save energy by making the exterior envelope smaller, the light well should be

enclosed. This created an atrium space, for which schematic designs and illustrations are included in the document.

In the interview with Kimberly Johnson discussing the Detroit Opera House, we discussed at length the reason why this building was chosen to be the new home of MOT. She said that one of the main factors behind the selection was that the proscenium arch was the exact dimensions they needed in order to participate in production sharing (a common practice in opera and ballet).²¹¹ Obviously, the arch was retained, and as much of the historic fabric of the auditorium as possible was restored. Much of the auditorium interior had been destroyed during the time when the building had no roof. Johnson said that over 90% of the original plaster was lost and had to be replastered.²¹² The most noticeable addition of new fabric came from the addition of the stage house (Fig. 9); built to accommodate the new function of the theater. The Detroit Opera House took a more unconventional approach to renovation. Efforts were made to retain as much of the original fabric as possible, but since the building's function changed so dramatically (from a movie palace to an opera house) significant alterations had to be made to the space to accommodate for the new function.²¹³ This was not an event that occurred with the other two case study theaters, for they continued with their original intended functions.

Miscellaneous Factors

Site. The context in which both the Fox and Orchestra Hall are geographically located was taken into account. In each of the pre-design documents the architects noted the

geographic location of the building in relation to the city as a whole, as well as, the nature and function of surrounding buildings.

The Orchestra Hall master plan once again breaks up the site information into the following sections, Part II Restoration Considerations, Part III Rehabilitation Considerations, Part IV Master Plan Recommendations and then again in Part V Implementation. Part II Restoration Considerations, discusses the urban context surrounding the theater and how it has changed over the years.²¹⁴ There is a discussion on its role as being seen as an “urban corner” and how it should be retained as a significant feature to the site.²¹⁵ It also acknowledges that the block should be further developed, not only to provide the desperately needed square footage for the DSO, but that is how the site was intended to be. The architect supplied a sketch of one scheme of how the block could be in-filled to illustrate the positioning of the building in its context.²¹⁶ Part III Rehabilitation Considerations, builds on the concepts for further developing the site or not developing the site at all. Several concept sketches are provided to demonstrate different possibilities for areas of urban landscape (“utilization of land”), additional building massing, circulation patterns and its future role in the community (could this be a future subway stop?).²¹⁷ The discussion ends with a dialogue of scale and relationships of existing buildings in the area and what the future expansion efforts should possibly be in relationship to the historic fabric.²¹⁸ In the recommendations and implementation sections, the architect summarized the recommendations related to the site and context as follows:

- Retain the “urban corner” of the block
- Expand the building north

- Develop the balance of land into an “urban park”
- Emphasize the “urban continuity” at Woodward and Selden
- Provide for vehicular drop-off in the “urban park”
- Provide the opportunity for assembling space from surrounding underutilized buildings.
- Plan for a transportation related facility in the urban park
- Maximize the relationship of the existing Orchestra Hall, its new construction and park.²¹⁹

This list is interesting to review because it demonstrates the variety of urban design issues to deal with when restoring an assembly type space. Site and contextual development are crucial elements to any theater.

In the case of the Fox Theater, the city had planned for that area to function as a new theater district in which three theaters were to undergo restoration. In this context, it was important to make note of the number of parking spaces that were located within the new theater district so as to determine if more were needed to achieve maximum potential of the Fox Theater. As a part of the formation of the new theater district it was also noted that the City of Detroit had agreed to spend “\$4,000,000 in public improvements surrounding the Fox Center.”²²⁰

The Design Concept Analysis that was developed for the Fox Theater goes into great detail inventorying the number of parking spaces and their locations, discussing the necessity of parking attendant shelters, service docks for each of the three theaters that are acting as the catalysts for redevelopment, automobile drop-off points (including recommended sizing of the curb cuts) and a description of what the overall aesthetic of the new theater district should be.²²¹

As discussed with Kimberly Johnson, the MOT figured that it needed to acquire seven parcels of land and demolish two buildings in order to rebuild the stage house.²²²

The Detroit Opera House is situated in a location within the City that is fairly well developed (this was not the case with Orchestra Hall at the time of renovation). Since the area was well developed and more or less “open for business”, reprogramming the site was not an issue. (As a personal side note: throughout the conversation it seemed as though the focus was not at all on the contextual development of the building, but the focus was solely on the interior and making the space work for the performers. This was continually demonstrated by Johnson throughout the interview as she repeated that there was a “complete and unwavering commitment to the art form” for this project.)²²³

Economy. In any project there are many factors that can make or break its economic viability. The case study projects are no different from any other building in creating a feasible project. Historic buildings do have some financial advantages over new construction. One advantage is that they could qualify for historic designation and could then complete a certified renovation that could qualify for tax credit certification.

Another possible economic advantage is that there could be additional programs that offer low interest loans, grants, matching grants, or city programs that contribute monies to rehabilitation projects. Historic buildings will often evoke a fund-raising campaign in the case of not-for-profit organizations and persons that feel strongly about saving a building will be more willing to financially contribute to the renovation efforts.

Whatever the case maybe, all of the case study theaters had to deal with the issue of making the project economically feasible. Below is a discussion of either what the pre-

design document tells us how they might proceed or different/unique economic strategies that were utilized during the renovation process as described during the interviews.

The master plan developed for Orchestra Hall is a document that speaks in very broad terms. It touches on a number of topics, but does not commit to any specifics. The cost estimate section of the report recommends an immediate need for more research to see if there is a market for the proposed reuse of the site and suggest that the organization needs to develop a “funding scheme for the project...”²²⁴ The architect recommends that the project be a phased project and gives a rough cost estimate for three phases, a Recital Hall and Restaurant and Office Space.²²⁵ That figure was estimated at just over 12 million dollars for an estimated 120,000 square feet of space.²²⁶ The architect broke down the phases to reflect the following work:

- Phase one: exterior, audience facilities, performance facilities, administration/rental space, electrical and mechanical. This entire scope of work relates to the existing historic structure.²²⁷
- Phase two: site development, new addition, existing structure alterations, mechanical systems and electrical system. “This phase involves the construction of the addition which...” connects to the historic structure.²²⁸
- Phase three: This phase included “the adaptation of adjacent buildings for a new surround type recital hall/theater and the construction of high quality restaurant, with studio or rental office space above.” The architect estimated with this phase there would be an additional 40,000 square feet of expansion.²²⁹

The phasing of the project is probably what has made this project successful. Also, the open-ended nature of the document provided a framework for the organization to develop its own expansion plan.

The Fox Theater document noted that the building would more than likely qualify to be listed on the National Register of Historic Places and might even qualify for “Landmark Status.” By taking advantage of these designations and performing a “certified restoration... to Federal Standards” there would be tax advantages to the Owner.²³⁰ The building did receive Historic Landmark status and was successful in its utilization of both Federal and State Tax Credits.

As the project began to take form, architect, Edward Francis, discussed how the Owners decided to add a Risk Assessment Specialist to the team.²³¹ In terms of evaluating risk associated with seemingly costly recommended work by engineers and the architect, the Risk Assessment Specialist, analyzed various portions of work, their costs and costs associated if the work was not performed and a catastrophic event occurred.²³² Francis said that the Risk Assessment Specialist was the pivot point in the decision to install the horizontal dampening system in the balcony.²³³ We may not know if the balcony would have ever failed due to harmonic motion, but evidently, it was not worth the risk. The final costs associated with this project have been sealed with the Owner and were never made available to the Public, let alone the Architect.²³⁴ The estimated minimum renovation work was budgeted at just under 25 million dollars.²³⁵ There is a cost summary located in part VI Cost Estimate of the design concept analysis, along with a full cost breakdown in appendix A-VI-2 Cost Data. This is a minimum

amount because rentable finishing of tenant spaces was intentionally left out, pricing for a “white box” finishing level, hazardous material mitigation was not included, property acquirement was not included, “financing cost, legal fees or the cost for the Theater Systems Consultant and his carpenters.”²³⁶

The Owner was able to take full advantage of the fact that the square footage of the building almost exactly fit their needs and that the building had not been neglected. The advantage of an almost ideal program, the operable condition of the building and an experienced team, the Owner could take advantage of numerous deals (as discussed in the historical review) with the City of Detroit to make the project more economically feasible and were able to utilize the benefit of Federal and State Tax Credits. Often doing a project the “right way” as defined by a Part II for Tax Credit Certification, increases cost to a project; but it takes an experienced and talented team of professionals to pull together a project like the Fox Theater, as a certified restoration and economically viable renovation in such a short period of time.

The Detroit Opera House is the only building in this study that is not listed on the National Register of Historic Places. According to Johnson, the listing of the building or use of tax credits was never discussed.²³⁷ The MOT was also adamant that they were to be the sole Owner of the property and assets.²³⁸ Johnson did not discuss their financing scheme, but simply said that they had their business plan approved by their lending institution before she arrived on the team.²³⁹ When all was said and done, Johnson estimated that the final project total came in near the \$54 million mark.²⁴⁰

7. ANALYSES

Documentation

Due to the extensive length of time that it takes to perform many theater renovations it is imperative that the pre-design process is thoroughly documented in an archival format. Even though some renovations, like the Fox Theater, have a relatively short time span, the pre-design document serves as a guide for future work that was either not performed at the time of the renovation or as a reminder of why certain work was performed in a certain way as to maintain consistency in maintenance and/or any other work that may take place after completion of the initial renovation. An example of delayed work that was recommended in the pre-design document is at the Fox Theater. In an article published in January 2006 in an on-line journal called AllBusiness, Illitch Holdings president, Christopher Illitch commented on the recent addition of the tower sign, noting that the sign, “was always on a ‘to do’ list for the future. Today, we can officially say the restoration is complete. The new signage honors the past and also helps us look to future.”²⁴¹ The ‘to do’ list in this case was making reference back to the pre-design document created over twenty years earlier. Even though the Fox re-opened less than a year after starting renovation, only twenty years later can they officially say that the renovation is complete.

It is clearly important for the architect to have the client clearly define an overall goal or mission statement for the renovation project. As there are many ways of categorizing information, it is my opinion that the broader more generic categories as

used by K|F|C of Form, Function, Time and Economy²⁴² are the most successful in defining the objectives. The reasoning behind this opinion is that these broad terms cover all aspects of theater renovation and operation. For example, the category of Economy can cover such items as tax credit utilization, cost of materials and finishes, and stating that the bidding process will be used for the award of construction sub-contracts all in under one heading.²⁴³ The owner is given a clear picture of all objectives related to money. This pattern can be seen through each of the broad categories.

By contrast, breaking down the objectives into specific categories (as seen in the Orchestra Hall master plan) the reader has to look in multiple locations to understand the economic objective of the project. It is difficult to understand all factors relating to a single issue in the Orchestra Hall Master Plan because the information is so widely distributed throughout the document. In some instances the information is redundant and in other instances there seems to be a disconnect in understanding how the restoration work relates to the rehabilitation work.

The pre-design document needs to be organized in a manner that makes sense to a lay person. It is a document that may be read by financial backers, the client, consultants, interested persons and many more.

Programming

Function. The documents produced for the Fox Theater and Orchestra Hall, one being a Design Concept Analysis and the other being a Master Plan, respectively, have very different goals. The majority of the Fox Theater renovation project was an intense renovation over a relatively short period of time. Therefore, the Design Concept

Analysis was very detailed and provided a large amount of information that gave a rigid structure to the project. The Master Plan pre-design document needed to define and resolve issues that SOH had planned on implementing in future phases. Therefore, the architects could speak in broad generalities, concentrating on the smaller scope of work on which the organization wanted to focus in the first phase.

There was a consensus between both Edward Francis and Michael Quinn that the amount of detail that is defined in the pre-design document is based upon many variables: including the scope of immediate work, available funding, estimated project timeline, Owner request, and overall scope of work.²⁴⁴ The approach to a pre-design document must recognize as that there are many layers of information and decisions, every building is different and each building needs to be assessed on an individual basis with the Owner. To determine how many layers of information to expose is then based upon the variables suggested by Francis and Quinn.

Square Footage. The intended reuse of a space must have a program that is attainable within the boundaries that the building or property(ies) can accommodate. In all three case studies we see that square footage was either the main factor in selection of the site for reuse (Fox Theater and Detroit Opera House) or the restrictive barrier up to which an organization could grow (Orchestra Hall). The reuse function drives the recipe for required rooms and spatial configuration which is directly linked to the needed square footage for a buildings function. This study shows that the owner must have a clearly defined reuse function prior to assessment of an existing structure in order to determine functional viability.

Patron/Performer Comfort. Patron and performer comfort is a large topic that covers availability of dressing room facilities to toilet stall sizing to available leg room in the auditorium seating. It is a large topic and in the pre-design documentation for the case study theaters they dissect the buildings programs are evaluated room-by-room and compared to the intended function.

Through examination of the pre-design documentation it is evident that if one can avoid reconfiguration of the original seating design it is desirable to do so. When you change the location of the chairs, you are left with the thousands of holes in your floor that you will have to repair or replace all together. However, seating expectations are more generous than they were 75 years ago, when most of the movie palaces and vaudeville theaters were being constructed. To be comfortably seated for extended periods of time, we now require larger chairs and more leg room. Fortunately, the case study theaters were able to reuse their original seating configuration and in many instances reuse the seating, only replacing broken parts, providing new upholstery, or by using new chairs of similar size and design.

I believe that since the topic of potentially altering a space to make it comply to modern comfort standards has the potential to be a big ticket item, there needs to be a pre-design discussion addressing patron and performer comfort.

Code Compliance/Life Safety/Barrier-Free Accessibility. As said in the interview with Kimberly Johnson, “code rules everything.”²⁴⁵ However, with the establishment of historical significance and cautious planning, variances can be utilized as a permanent or temporary solution for short-comings in a historic structure that does not meet stringent

modern codes. The use of variances should not be abused, but used as a last resort to making a building work. Building codes are meant to enhance the experience of a space and to protect the users of a space during normal use and at times of emergency egress. Due to the typically high occupancy of a theater, there should be a strong argument to make as to why codes should be varied, so as not to impact the safety of the users.

Establishment of the baseline where the structure meets or fails is an essential item, however, it could scare an owner, that does not have the counsel of a qualified team, causing the owner to abandon a project. It can be a costly endeavor to significantly alter a structure to maximize code compliance. As with most projects, if the bottom economic line is not met, the project does not see fruition.

Technology and Systems

Exterior Systems. The discussion for each case study is tailored to the building's specific needs. For example, the Fox did not require as much work to the exterior systems, so it was an insignificant topic to concentrate on in this report. Whereas, QEA dedicated an entire section to Restoration Considerations within their master plan for the exterior masonry system. The focus of the body of this report focused on identifying problem areas and strategizing solutions for restoration of historic fabric in relationship to the initial intended function. A preliminary document should be comprehensive enough for the reader to gain an overall view of the building and all of its systems.

Theater Systems. The presentation of the topic of theater systems I believe is based largely upon the organization of the project and team. We see in the Fox Theater document that the Owner separately hired a consultant that solely dealt with theater

systems, while the architect was charged with the remainder of the project. The communication between these two parties was not handled as acting as one team, but as two different scopes of work. In the Orchestra Hall master plan we see that the theater systems are integrated with the dialogue of the entire report. The master plan document flows from section to section more so than the obvious insertion of separate reports that we see in the Fox Theater design concept analysis.

Engineering. Historic structures almost always require the services of engineering consultants. More importantly, the engineering consultants selected should have experience in working with historic structures and, if available, experience working in the same type of building under renovation.

By examination of the engineering reports that are contained within these pre-design documents the consultants seem to have met the above mentioned qualifications. Many of the solutions are thinking outside-the-box from usual engineering conventions, for example, there was the innovative use of the horizontal dampening system installed at the Fox Theater. Both documents reviewed utilized engineering consultants to gain a more comprehensive picture of the condition and viability of the existing structure.

Finishes and Decorative Elements

Hazardous Materials. From a combination of previous experience and examination of the case study documents through review of hazardous materials in a pre-design document does not have a place in this part of the design process. It is important for the architect to be aware of this topic and the dangers that maybe faced with a particular

project, but in the State of Michigan removal of hazardous materials is the owner's responsibility, not the architects.

Original Fabric vs. New Fabric. This is an important topic if the building is currently listed on the National Register of Historic Places, may become registered prior to the renovation process, if the owner is intending on utilizing tax credits or if it lies within the confines of a historic district. All of these items regulate or restrict the nature of new or added fabric that can be added during the renovation process. Therefore, it is important to define what the economic strategy is for the renovation prior to the initiation of the research require for the creation of a pre-design document. Orchestra Hall, while the owner wanted to maintain as much of the original fabric as possible, would have been restricted otherwise because the property is listed on the National Register. The Fox Theater, having the same restrictions, took the renovation process further and was diligent in limiting the changes and preserving character defining features because of the use of tax credits as a part of their economic plan. Since the Detroit Opera House did not utilize any tax credits and is not a listed building, they were free to significantly alter the theater to suit their function.

As stated before, the treatment of the historic fabric is a vital part of the conversation to have with the owners and financial backers of the project. There has to be an understanding of the historical significance of the structure, and its status with local, state and federal agencies prior to recommending a prescribed treatment to the historical architecture, and how the addition of new fabric is regulated.

Miscellaneous

Site. Both pre-design documents examined the relationship of the building to its surroundings. Both case studies examined their respective sites from a macro perspective, for example, understanding the geometry of the nearby buildings and from a micro perspective, for example, where could a patron be dropped off safely from a vehicle to safely enter the building. Thorough understanding of what the nearby resources were help blend the theaters into their urban context and help them ultimately become successful businesses. By examining their surroundings the architects then were able to project the future role that particular theater was going to play in the community.

The Fox Theater partnered with the City of Detroit to utilize City funds to plan the urban landscape for that particular stretch of Woodward Avenue. They essentially, branded a four block stretch of Woodward Avenue as the reemergence of a “theater district” within the City of Detroit. This careful planning has helped attract patrons to this area within the City by creating a sense of place and security, and has eased the confusion of vehicular transportation to the site. Through similar planning, Orchestra Hall helped itself grow into the massive performing arts venue that we see today. The area is continuing to grow and develop. The next theater in that neighborhood to be renovated is another C. Howard Crane theater called The Garden Theater. It is slated to be transformed into a night club venue. The vision of the architects for these two projects, almost thirty years ago, have transformed destitute areas of a downtrodden city into thriving neighborhoods.

The Detroit Opera House is located in an area of Detroit just south of the Fox Theater where it benefits from surrounding buildings such as, Comerica Park, Ford Field and the Greektown area of Detroit. These buildings while much newer than the Opera House have transformed the Downtown area in terms of planning and vehicular movement. Also, the renovation of the Opera House came almost ten years after the “completion” of both the Fox and Orchestra Hall’s theater spaces. The need for this building to serve as a pivot point in its section of the city was not as defining as the other two case studies. We can speculate on missed opportunities for the Detroit Opera House at the time of construction as to its place within its micro community, such as, orienting traffic patterns to create a welcoming and clearly defined entrance to the dual-sided building, or implementation of creative urban landscape that enhances the street experience.

Discussing any existing building in terms of its place within its community helps clarify how the building will physically be used by the patrons and can aid in determining design boundaries and vision. The discussion of site should be examined in any pre-design document.

Economy. The structure should be evaluated for its historic integrity and possible addition to the National Register of Historic Places, should this be an option that fits within the financial plan of the renovation of the structure. Certain buildings of significant historical value may even qualify for National Landmark status. By obtaining a status of this nature and completing a certified renovation there may be significant tax advantages available to the owner or investors.

In both of the pre-design documents examined, cost estimates of varying degrees of complexity were developed. As a trend that has developed throughout this document, the depth of the cost break down and the preciseness of the calculations is a function of the goals identified in the report. As we learned from the Fox Theater, Design Concept Analysis, it needed to be very detailed due to the time constraints of the project, the frame work had to be precise. The Master Plan for Orchestra Hall was developed for a project that would take one or two decades to see their full vision become reality. Of course, prices, needs and context of the site can all dramatically change over that kind of a time span, so to be precise would have been detrimental to the project. The owner needed a loose framework to guide the project over time. The framework in this instance was purposely and thoughtfully phased in order for the organization to financially bear the burden of renovation.

The Detroit Opera House might have been able to take advantage of outside economic incentives had there been thoughtful planning before the point where AKA was hired to complete the project. While the idea of not using public assistance for funding their renovation is honorable in some respects, it may have cost them in terms of loss of historic fabric, money and time. The siting of this structure is usual because it does not have a service façade where it makes sense to utilize materials that are more cost effective. Due to the economics of the project, MOT had to make a very difficult decision and they chose to value-engineer the substantial addition's exterior cladding system. The new addition is clad in the value product of EIFS. The choice of going with a value cladding system over the intended marble façade could have possibly been

avoided if creative solutions had been recommended to the client to honor themselves and the historic structure they were renovating.

Findings Summary

Orchestra Hall, renovated by a not-for-profit organization, recognized they needed to implement their vision as a phased project. The pre-design document provided a framework for the multiple phases with the first phase described in more detail than the two future phases. The master plan document promoted responsible growth for the organization and outlined cost estimates, which would be useful in fund raising efforts. The document also promoted the addition of sensitive new fabric. There was to be diligence expressed in uncompromising the renowned acoustics, awareness to all of the significance of the building, and many of the code issues to be resolved by the addition of new fabric, not by alteration of the existing fabric. However, in reviewing the overall format of how the information was presented in the master plan document, I found that it was cumbersome and difficult to understand the entire picture of one particular item because I had to constantly flip back and forth between the restoration and rehabilitation sections. This document provided a comprehensive view of the building, was obviously quite flexible, and provided the framework that SOH needed to succeed in meeting their objectives. It took twenty-six years for the organization to meet their goal, and the master plan over the long term helped them realize their vision.

The Fox Theater's Design Concept Analysis, is a highly detailed document. This was due to the accelerated timeline for construction. The document provided a clear understanding of the project, acting almost as a written drawing of the scope of work.

One thing that jumps out at someone reviewing the document is that the structural section is severely lacking information. Being that this was not a phased project and the private owner had a set date of reopening it was hard to take in the heavy price tag of the project. There was difficulty in determining what could be cut from the scope of immediate work. Unique from the other two case studies, they hired a Risk Assessment Specialist to aid in determining budget cuts. Certain items listed in the pre-design document as work that needed to be performed and was subsequently cut from the immediate need list, came back to haunt the team on opening night (restrooms flooding, unbalanced mechanical systems, fire in the organ). I found that the document format made it very easy to understand the big picture with the building and site. The *Problem Seeking* approach to Form, Function, Time and Economy, proved to produce a comprehensive, concise and flexible document for the team to execute.²⁴⁶ It provided insight and information on the significance of the building, the current condition and work that needed to be accomplished. The building opened as scheduled with the bulk of the work completed. From that point on the Owner continued with the remainder of the renovations, however, that work consisted of items that were inconsequential to the operation of the theater.

The Detroit Opera House, primarily design-build, did not utilize a pre-design document. They experienced numerous unqualified project teams prior to the hiring of Albert Kahn Associates, which constant remobilization efforts inherently bring unneeded stresses to the overall project. By not thoroughly understanding the full project budget extreme value engineering was employed on the exterior of the new

fabric (new stage house). Even as a not-for-profit organization, there should not have been the necessity to compromise the overall architectural character of the building. Complete understanding of project economic needs, as we saw with Orchestra Hall, provides for thoughtful budgetary planning and building expansion. The timeline became inefficient due to the constant remobilization, evidence of this was discussed during the interview by the statement that the plaster was still drying on the walls as the doors opened on opening night.²⁴⁷ There were also the “surprise” code violations²⁴⁸, which would have more than likely been discussed in a proper code review which normally occurs in the pre-design process. The theater, in the end, does meet the needs of Michigan Opera Theater.

8. CONCLUSION

As the study progressed and the document review and interview content was dissected, it became obvious that not all pre-design documents are created equal and thus they are given different names (i.e., master plan, design concept analysis, development plan, historic structure report, existing conditions assessment) because they each are designed to each serve a different purpose.

The Master Plan for Orchestra Hall focused on preservation issues and design challenges that affected immediate work and identified, but generalized work that would need to be performed in the future. The document provided the Owner a solid structure of restoration and rehabilitation issues that should be addressed and recommendations on how to remedy them. Also, it looked forward to the future by providing a loose structure for the growth of their organization and a strategy to implement the recommendations in a phased process.

The Concept Design Analysis for the Fox Theater is an intense examination of numbers and what it would take to get the building up and functioning within a one year time span. In my discussion the Edward Francis, the move for the Illitch's to purchase the Fox Center was not only a way for Little Caesars to become a part of the rebirth of the City of Detroit, but it was an existing building that met the criteria for the type of venue that they had initially intended on building new in the suburbs of Detroit. However, as with any business the economics have to work, and the Owners wanted to be sure that not only were they going to be able to save one of Detroit's gems, but that the corporation would continue to thrive in their new location.

This study shows that clearly there is a benefit to utilizing the pre-design process in historic theater renovation. It became apparent at the end of this study that there are four key components to the overall creation of the pre-design document. This complex building type benefits from the pre-design process by gaining crucial understanding of:

- The nature of the pre-design document.
- The nature of the client.
- The nature of the pre-design team.
- The scope of work and time available.

The nature of the pre-design document relates to the overall theater renovation vision. If the project is to be a phased project, such as many theater renovations are, providing a loose framework would be more beneficial than a heavily detailed document.

The nature of the client, is understanding your client and their needs. Historic theaters attract a wide variety of owner types that have an even broader variety of reasons why they are undertaking such a project. By understanding who you are working for, you can carefully tailor a plan that meets their needs. For example, a not-for-profit group typically has different needs than a private, for-profit, owner or corporation and to understand those differences could aid in the overall renovation process. In addition, recognizing the building as a client. The architect should be an advocate for the client that can not speak.

The nature of the pre-design team accomplished through the construction of an assembly of qualified consultants and thoughtful education of the client. Due to the

large project teams that are assembled for theater renovation projects, it is imperative that consultants be assessed not only on their portfolio, but on their compatibility with the timeline and overall compatibility of the other participants on the team. A thorough understanding of all team members is essential to a smooth operating project team.

The scope of work and time available arguably controls the outcome of the three previously discussed components. Theaters are typically long-term projects, the framework that a pre-design document can provide, aids in the establishment of a realistic timeline to meet scope of work and economic goals. This component is key in calculating budgets and determining feasibility of a project.

The research conducted in this thesis shows that there is a need in the heritage architectural practice to produce pre-design documentation that provides for the owner and project team a clear understanding of the meaning of the cultural resource that they are about to perform architectural work on. Heritage projects can have longer timelines than a typical project, may involve more specialist consultants on the project team, and they may have unique client base that has special needs. The pre-design process and its deliverable needs to address the four previously discussed topics in a comprehensive, concise and flexible manner. The assembly of the pre-design documentation should include information from qualified sources, for example, qualified project consultants or qualified team members. Based upon the case studies in this thesis, the format of Form, Function, Time and Economy²⁴⁹ is a suitable configuration for a document that is easy to read and understand. This information should be available in an archival format due to the lengthy timelines often employed for these projects. The document title should also

convey exactly the information that the document is responding to. The pre-design process in the case study theaters versus the case study theater that was design-build prove the strength of the pre-design process as a valuable asset to the owner and project team.

To remind ourselves: This thesis analyses the impact of the pre-design process in historic theater renovation. Through careful research and dissemination of the data two main conclusions have been made: (1) the utilization of the pre-design process is beneficial to a historic theater renovation, and (2) to achieve overall project success there should be a high quality pre-design document that is comprehensive, concise, and flexible.

Future research on this topic could attempt to develop classifications that may determine what exact components make up a specific pre-design document. Also, monitoring of additional theaters and their pre-design processes and design-build processes could further solidify or refute the conclusions developed in this thesis. There are many different avenues that this research could be expounded upon. I will in my professional practice continue to strive for higher quality pre-design documentation and will continue to re-analyze processes utilized by myself and others.

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 Certificate in Historic Preservation, Texas A&M University, August 2008.
 Bachelor of Science, Architecture, Lawrence Technological University, May 2002.
 Architectural Coursework, University of Texas at Arlington, Fall 2004.

Recognition & Memberships:

Tau Sigma Delta, Phi Kappa Phi
 The National Trust for Historic Preservation
 The Association for Preservation Technology
 Pointe du Hoc Battlefield Documentation Team, Normandy, France
 Tuition Remission Scholarship – Texas A&M University
 Dean's Fellowship – University of Texas at Arlington
 Architectural Record, website, Concept for the World Trade Center Project
 Lawrence Technological University Trustee Scholarship
 Friedman Scholarship for Excellence in Construction Drawing Preparation
 Undergraduate Honor's Design Exhibition Participant

Representative Projects:

Lucas County Courthouse, *Toledo, Ohio*

Conducted historical research on this 1870s building listed on the National Register of Historic Places and a survey of the existing conditions of the masonry, as part of the initial study for exterior restoration of the courthouse.

Strand Theater, *Muskegon Heights, Michigan*

Prepared a Development Plan for the City of Muskegon Heights for this historic theater. The plan included recommendations for new seating configurations and rehabilitation of the building's exterior and interior, an analysis of the theater's viable potential uses, and cost and schedule information for implementation of these recommendations.